

# SportDiver

THE OFFICIAL PUBLICATION OF THE PADI DIVING SOCIETY 

## How to Avoid Panic

Pro Safety Tips  
You Should Know

## Read Her Story

The *Hilma Hooker*  
in Bonaire  
P. 6

# 13 EASY WRECKS TO DIVE

THE BEST GEAR FOR SHORE DIVING + THE MAGIC OF MAUI

APRIL 2016 VOL. 24 NO. 3



A full-page background image showing a scuba diver in a black wetsuit and blue fins, equipped with a white tank and yellow hoses, cleaning a large whale shark. The diver is positioned above the shark, reaching down to remove a piece of brown marine debris from its side. The whale shark's skin is covered in numerous white spots and stripes. The scene is set in clear blue water with some bubbles visible.

# DIVE

**Remove, record and report marine debris.  
Take the AWARE Dive Against Debris™  
Distinctive Specialty Course.**

**Visit a PADI Dive Center  
or Resort to enroll today.**

# AGAINST DEBRIS™





# Contents

April 2016 Vol. 24 No. 3

P48

Whether you're diving or snorkeling, Maui's Molokini Marine Preserve will capture your heart.



## Departments

9

### Dive Briefs

The best spots for finding tasty street eats; fun facts about the marine worm; the *Calypso*'s rebirth; and the latest news from the PADI Diving Society and Project AWARE.



24

### Images

Transform the average into exceptional with our underwater photo pro's macro tips.

30

### Gear

Load up your dive bag with our gear editor's picks for a great shore-diving experience.



32

### Dive Training

Panic can turn a routine dive into a dangerous situation — we asked dive pros for their tips on how to handle it; plus, the latest flying-after-diving guidelines from Divers Alert Network.

61

### Dive Travel

Giant-stride into a virtual aquarium in the Gulf of California's waters aboard *Rocio Del Mar*; 10 reasons to dive (and explore) Roatan; and the world's best cruise-ship ports for scuba diving.

## Features

38

### Wreck Trek

Our guide to what you'll find on 13 unforgettable sunken vessels — and the stories of how they ended up on the bottom of the sea.

BY BROOKE MORTON

48

### At Rainbow's End

It's easy to succumb to the many charms of Maui, Hawaii's second-largest island, when discovering its beauty above and below the water.

BY REBECCA STRAUSS

56

### One Fish, Two Fish ...

REEF helps make counting fish a beneficial — and fun — endeavor amid the beauty and diversity of Bonaire's marine habitats.

BY MELISSA GASKILL



 **PROMASTER**

©2016 Citizen Watch Company

# GO DEEPER.

AQUALAND DEPTH METER



ISO Compliant Diver  
200 Meter  
Water Resistant  
Depth Display to  
70 Meters  
53mm

[citizenwatch.com](http://citizenwatch.com) |  CitizenEcoDrive



A watch that never needs a battery.

# CITIZEN

BETTER STARTS NOW



From the Editor's Desk

# History Lesson

Take a deeper dive with the stories of our favorite wrecks

Shipwrecks — sure, they can look big, bad and bone-chilling. But we divers know something else: These vessels, often beautifully transformed by the water their captains once navigated, are time capsules with a story to tell. Whether sunk by nature, war or human design, the ships themselves have histories that we find compelling. As we went to press, a number of shipwreck stories had popped up: Byzantine shipwrecks dating from the fifth to 11th centuries found during the construction of a tunnel under the Bosphorus are now being painstakingly restored; the wreck of the Spanish galleon *San José* off Colombia, which could contain as much as \$17 billion in gold, silver and jewels, was at the center of a controversy concerning who found it; and NOAA

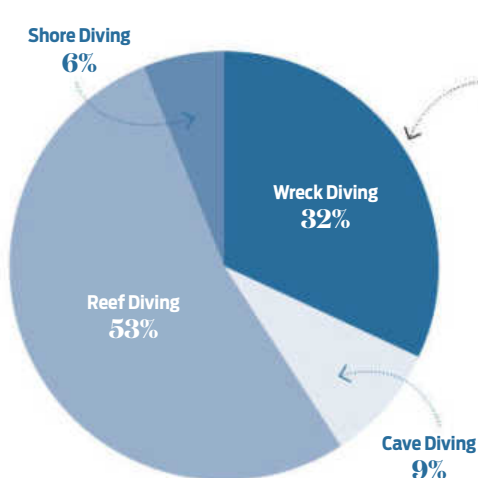
researchers discovered the remains of two whaling ships that likely sank with 31 others in the late 1800s off Alaska. We chose the 12 ships (and one plane) in our “Wreck Trek” feature because they’re awesome dives, but also because we wanted to share a bit about their history. Turn to page 38 to read their stories.

**Patricia Wuest, Editor-in-Chief**



## What is your favorite type of #scubadiving?

Our Twitter followers weighed in on a classic question



### SUNKEN SCENE

Wreck lovers will notice the colorful *Hilma Hooker* on our cover. The former drug-smuggling vessel took on water after languishing in a Bonaire harbor. For more wreck stories, see pg. 38.

PHOTO BY ALLISON VITSKY SALLMON

**Doing Our Part for the Environment** This product is from sustainably managed forests and controlled sources.



# SportDiver

THE OFFICIAL PUBLICATION OF THE PADI DIVING SOCIETY

CONNECT AT:

SPORTDIVER.COM

FACEBOOK.COM/SPORTDIVERMAG

@SPORTDIVER

@SPORTDIVERMAG

#### EDITORIAL

**Patricia Wuest** EDITOR-IN-CHIEF

**Andy Zunz** MANAGING EDITOR

**Roger Roy** GEAR EDITOR

**Cindy Martin** COPY CHIEF

**Noelle Campbell, Paige Wilson** INTERNS

#### ART

**Elizabeth Fleener** ART DIRECTOR

**Chelsea Pomaes** PHOTO DIRECTOR

#### CONTRIBUTORS

**Mark Evans, Melissa Gaskill, Travis Marshall, Brooke Morton, Alex Mustard, Karl Shreeves, Richard Smith, Rebecca Strauss, Christian Vizi**

#### DIGITAL

**Martin Kuss** SENIOR DIGITAL PRODUCER

**Becca Hurley** DIGITAL EDITOR

#### SALES

**Laura Walker** GROUP PUBLISHER

**David Benz** ASSOCIATE PUBLISHER

**Linda Sue Dingel** TERRITORY MANAGER

407-913-4945; lindasue.dingel@bonniercorp.com

**Jeff Mondle** TERRITORY MANAGER

760-419-5898; jeff.mondle@bonniercorp.com

**Melissa Tone** ADVERTISING SALES COORDINATOR

407-571-4580; melissa.tone@bonniercorp.com

#### PADI DIVING SOCIETY

**Theresa Kaplan** PADI DIVING SOCIETY DIRECTOR

949-858-7234, ext. 2322; theresa.kaplan@padi.com

**Adrianne Miller** PADI DIVING SOCIETY MARKETING CONSULTANT

949-858-7234, ext. 2513; adrianne.miller@padi.com

**Matt Hickman** VICE PRESIDENT, DIRECTOR OF BRAND STRATEGIES

**Shawn Bean** EDITORIAL DIRECTOR

**Dave Weaver** CREATIVE DIRECTOR

**Leigh Bingham** CONSUMER MARKETING DIRECTOR

**Haley Bischof** GROUP MARKETING DIRECTOR

**Oriana Agudelo** SENIOR MARKETING MANAGER, DIVE AND TRAVEL GROUP

**Holly Pulcher** MARKETING MANAGER, DIVE AND TRAVEL GROUP

**Robyn Sheckler** PUBLIC RELATIONS MANAGER

**Lindsay Gigler** CONTENT SOLUTIONS MANAGER

**Michelle Doster** GROUP PRODUCTION DIRECTOR

**Kelly Kramer Weekley** SENIOR PRODUCTION MANAGER

**Julia Arana, Jennifer Remias** GRAPHIC DESIGNERS

**Sheri Bass** HUMAN RESOURCES DIRECTOR

## BONNIER

**Tomas Franzén** CHAIRMAN

**Eric Zinzchenko** CHIEF EXECUTIVE OFFICER

**David Ritchie** CHIEF OPERATING OFFICER

**Elizabeth Burnham Murphy** CHIEF MARKETING OFFICER

**Sean Holzman** CHIEF DIGITAL REVENUE OFFICER

**John Graney** VICE PRESIDENT, INTEGRATED SALES

**John Reese** VICE PRESIDENT, CONSUMER MARKETING

**Jennifer Anderson** VICE PRESIDENT, DIGITAL AUDIENCE DEVELOPMENT

**David Butler** VICE PRESIDENT, DIGITAL OPERATIONS

**Perri Dorset** VICE PRESIDENT, PUBLIC RELATIONS

**Jeremy Thompson** GENERAL COUNSEL

All contents copyright 2016 Bonnier Corporation. No use may be made of materials contained herein without express written consent. For inquiries, please contact us at Bonnier Corporation, 460 N. Orlando Ave., Suite 200, Winter Park, FL 32789.

Publications Mail Agreement Number: 40612608  
Canada Post Returns: IMEX Global Solutions, P.O. Box 25542,  
London ON N6C 6B2 Canada  
Printed in the USA

Retail single copy sales: ProCirc Retail Solutions Group,  
Tony DiBisceglie

For reprints, email reprints@bonniercorp.com.



FOR CUSTOMER SERVICE AND SUBSCRIPTION QUESTIONS, such as renewals, address changes, email preferences, billing and account status, go to: [sportdiver.com/cs](http://sportdiver.com/cs). You can also email [PAcustserv@cdsfulfillment.com](mailto:PAcustserv@cdsfulfillment.com). In the U.S., call toll-free 888-333-7234. Outside the U.S., call 515-237-3697 or write to Sport Diver, P.O. Box 6364 Harlan, IA 51593-1864.





**DIVE 365**  
CAYMAN ISLANDS

WHEREVER YOU FIND YOUR SMILE, YOU'LL FIND OURS.  
**THAT'S CAYMANKIND.**



A WORLD AWAY. JUST ONE HOUR FROM MIAMI.  
[www.divecayman.ky](http://www.divecayman.ky)



"My PADI teaches me to  
respect and protect our  
oceans for future  
generations."

Emily Krak  
PADI Open Water Diver

DISCOVER



See Emily's story at [padi.com/emily](http://padi.com/emily).



©PADI 2016





IN THE NEWS / P11  
PROJECT AWARE / P14  
TRAVEL TIPS / P16  
HUMPBACK WHALE  
HEARTBEATS / P17  
MARINE WORMS / P18  
NEW GEAR / P23

# Dive Briefs

*The people, places and events making headlines underwater*

Michael Muller shifted his focus from Hollywood A-listers to sharks for a newly released book.

## Profile

## Michael Muller

**H**ollywood photographer Michael Muller credits his wife for his love affair with sharks. Although he has been a diver since age 10, he hadn't deliberately sought them out until she gifted him a great white expedition to Guadalupe, Mexico, on his 36th birthday. The next day he called to secure a spot. That was the beginning of an image collection that will be published this month in his new Taschen book, *Sharks*.

### **Q: Tell us about your first shark encounter.**

**Muller:** It was the first one in the water at 5:30 in the morning. When I locked eyes with that first great white, I was hooked. Right away, I hated being in the cage. It felt claustrophobic and I wanted out. But, that day, if they had said, "The door's open, go swim," I wouldn't have. I didn't have the experience. But the desire was born. Years later, and I've been free swimming with



MICHAEL MULLER/TASCHEN IMAGE DISTRIBUTION BY CPI-SYNDICATION

**DIVE  
IN**

**Jaws-Dropper** Not everyone has the budget — or guts — to travel the world and swim with sharks. Luckily, Michael Muller is bringing his experiences to you. His book, *Sharks. Face-to-Face with the Ocean's Endangered Predator* includes incredible images and essays by Philippe Cousteau Jr., Dr. Alison Kock and Arty Nelson. **Hardcover with foldouts; 11-by-14.6 inches; 334 pages; \$69.99**







*I waited a tenth of a second to press the shutter. And I got it breaching. That picture that had been in my head for years.*

shark coming out of light, they are going to stop and absorb that image. My goal was to get people to stop, to educate them to the fact that we kill hundreds of millions of sharks a year.

**Q:** To that end, you went to great lengths to secure a jaw-dropping photo in South Africa.

**MM:** At the time, nobody knew if great whites breached at night, but my gut said they did. It was the last morning of the last day of a trip in 2015 when I saw white water — that's all you can see at first. I waited a tenth of a second to press the shutter. And I got it breaching. That picture that had been in my head for years. It took two years, two trips, 10 days at sea, and close to \$100,000 in crew, gear and boats to capture this image nobody had ever seen. It was one of the top 10 moments of my photo career. I experienced a level of fulfillment that I hadn't felt before in my life.

— Brooke Morton

## Connect with Muller

### Instagram

[michaelmuller7](#)

View some of Muller's favorite shots, including behind-the-scenes photos.

### iTunes

#### MullerPhoto

Channel your inner photo pro with the effects and filters on Muller's iPhone app.

### Web

#### mullerphoto.com

See Muller's diverse portfolio, which includes some of the day's biggest stars.

had to bring the studio to the sharks.

**Q:** How so?

**MM:** Lights. At the time, only HMI movie lights or 400-watt strobes were available for underwater shooting. Neither would work. I met a photographer who understood what I was looking for. I paid him tens of thousands of dollars in advance. In the end, he sent me a metal box with a hole cut in it. I started crying when I saw it. I wouldn't even trust something that crude to work in the pool. I almost gave up. But when I met someone else, someone who had confidence in building surf housings, I said OK. This time, I paid only a quarter of the fee up front.

**Q:** Did that prototype work?

**MM:** Around that time, I'd been photographing IWC watches on actors, not asking anything in return. Shortly thereafter, I met the president of IWC and showed him my work. I also told him about the lights I was

working on. He gave me the Aquatimer campaign on the spot. His employees looked at him like he was crazy, giving it to a Hollywood photographer and not an underwater guy like David Doubilet. Luckily, the day before we were set to leave for the shoot in the Galapagos, the lights arrived.

**Q:** You invested so much in this lighting concept. Why?

**MM:** If you show someone a

great whites, bulls, oceanic whitetips — all the species you see in the book.

**Q:** You've redefined expectations of shark imagery. Where did that inspiration come from?

**MM:** After that Guadalupe trip, I went back to my day job and realized I wanted to light up a great white like I would in the studio. But you can't bring a shark to the studio or it'd be dead. I





## Odds & Ends

From under the sea



### Ocean Ninja

It is its black color and not its covert method of waging warfare that earned a new species its name: ninja lanternshark (a couple of kids suggested the name). The tiny shark — the largest found was 20 inches long — was first collected off the Pacific coast of Central America in 2010 and has jet-black skin that contains photophores, which makes it glow as it hunts in deep water.

### GROWN-UP SCIENCE FAIR

Calling all inventors: We've got a \$4 million reason to get serious about ocean research. Peter Diamandis, CEO of XPRIZE, announced a three-year competition that challenges researchers to find a way to map Earth's seafloor.

To win the Shell Ocean Discovery XPRIZE, all you have to do is develop a vehicle that can create high-resolution maps of the seafloor at depths of about 13,125 feet — or roughly 2.5 miles below the ocean's surface. No problem, right?

Right now, researchers have better maps of Mars' surface than they do of Earth's seafloor, Diamandis says.

The winning team will take home \$4 million, and additional monetary prizes totaling \$3 million will be awarded to the top 10 teams in the competition. For more info, go to [oceandiscovery.xprize.org](http://oceandiscovery.xprize.org).

# All-Natural Work of Art

Parting clouds allow NASA to capture a beautiful scene: swirling masses of phytoplankton in the northern Atlantic

BY PATRICIA WUEST

Last fall, when a bloom of phytoplankton turned the north Atlantic into a swirling mass of color, it seemed as if a painter were using the ocean as a ginormous canvas.

Phytoplankton are algae-like microscopic marine plants that are the main food source for several species of whales, shrimp and jellyfish. Like daffodils and broccoli, they require sunlight to grow and so float in the upper part of the ocean. The gorgeous color display in fall is common, but heavy cloud cover usually prevents satellites from snapping photos of the phenomenon.

In September 2015, NASA's Visible Infrared Imaging Radiometer Suite on the Suomi NPP satellite was able to capture this remarkable image through an unseasonal gap in the clouds.

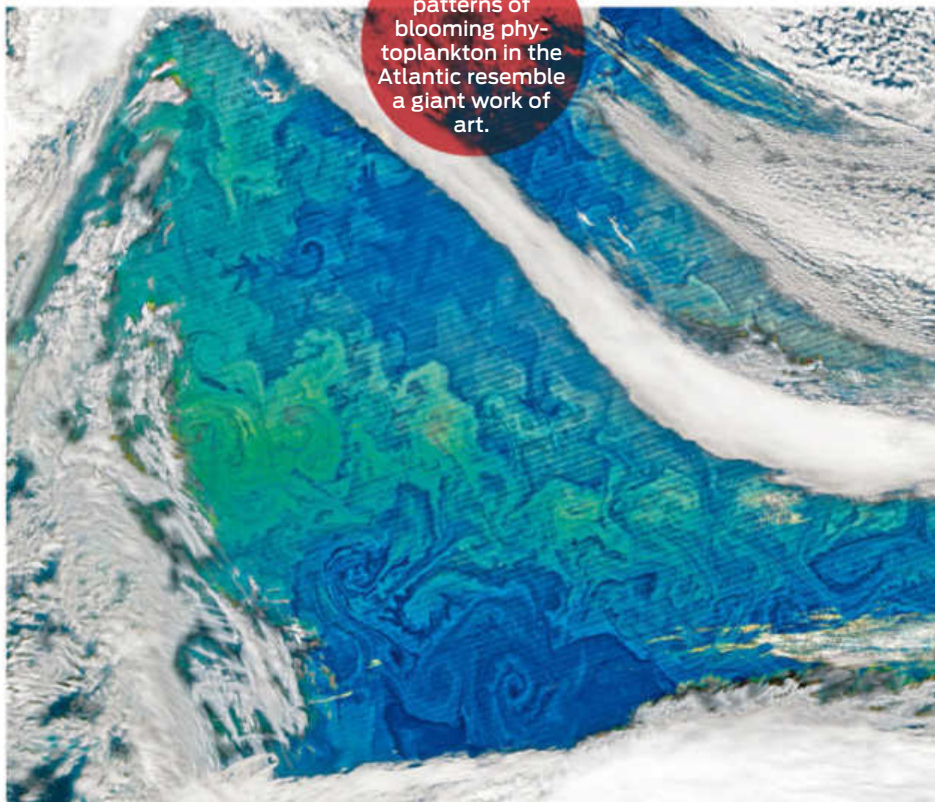
"The image does a beautiful job of

showing the close link between ocean physics and biology," said Michael Behrenfeld, a phytoplankton ecologist at Oregon State University, in a NASA release. "The features that jump out so clearly represent the influence of ocean eddies and physical stirring on the concentration of phytoplankton pigments and, possibly, colored dissolved organic matter."

Phytoplankton plays an evident role in the marine ecosystem, but NASA is working to learn more about how its cyclical blooms affect aerosols in the atmosphere and cloud coverage. Just weeks after NASA captured the image below, a group of researchers was in that part of the Atlantic Ocean to take samples as part of a five-year study.

For more amazing views of Earth from space, follow @NASA on Twitter.

The swirling patterns of blooming phytoplankton in the Atlantic resemble a giant work of art.





# Calypso to Sail Again

Research vessel of famed ocean explorer Jacques-Yves Cousteau to be restored; ship was at the center of a dispute as it lay rusting in a French shipyard

BY PATRICIA WUEST

Jacques-Yves Cousteau, shown in 1959, traveled the world aboard *Calypso*.



The research vessel *Calypso* is to ocean explorer Jacques-Yves Cousteau what the iconic Fallingwater home is to architect Frank Lloyd Wright: the inspired and inspirational creation of a visionary man. The specially outfitted, 139-foot *Calypso* transported Cousteau and his team on oceanic expeditions for more than four decades. (Today, Wright's iconic Fallingwater is a National Historic Landmark and hosts residency programs led by professional architects.)

*Calypso* sailed from the warm waters of the Indian Ocean

to the ice of Antarctica, towed the Conshelf structures, sailed up the Amazon River and down the Mississippi, and explored the waters of the Sea of Cortez, Galapagos, New Zealand, Marquesas and French Polynesia. In short, says the Cousteau Society, aboard *Calypso*, Capt. Cousteau “left his mark forever on the planet and the oceans.”

Through it all — “breakdowns, hurricanes, storms, ice, sand banks” — the research vessel *Calypso* was both operations base and home to Cousteau and his team. One of its many innovations was its “false nose,” an underwater observation chamber that protruded from the prow. Nestled inside, researchers could peer through portholes to observe marine life. Other inventions on board included one- and two-man mini submarines, a diving saucer named *Denise* and underwater scooters.

*Calypso* sank in 1996 — a year before Cousteau died of a heart attack at his Paris home — in Singapore when a barge accidentally rammed into it as it was departing for an expedition along the Yellow River in China; for 20 years, efforts to restore the vessel were beset by problems. In January, however, the Society announced that Cousteau's beloved ship would sail again. As we went to press, Francine Cousteau, president of the Cousteau Society (and Jacques Cousteau's

second wife and widow), announced that “at the end of the first trimester of 2016 *Calypso* will be able to leave the ... shipyard, to begin its new life. Restored, she will sail again as an ambassador for the seas and oceans, as Capt. Cousteau wished.”

The vessel was docked at a shipbuilding yard in Brittany, France, for repairs in 2007, but legal issues over repair payments prevented the family's organization, Equipe Cousteau, from completing the work. Equipe Cousteau reached a settlement and agreed to pay the shipyard roughly \$327,000.

The Cousteau Society announced in January that the money was raised through public contributions. It will take about 12 to 18 months for the vessel to be shipshape, according to BBC. For updates on *Calypso*'s restoration progress, visit [cousteau.org](http://cousteau.org).

## DID YOU KNOW?

→ A former Royal navy minesweeper christened in 1942 as HMS J-826; in 1949, the ship was converted to a ferry and renamed *Calypso*. Cousteau purchased the vessel in 1950.

→ By 1953, *Calypso* was turned into a floating film studio as well as a research vessel. In 1955, *The Silent World* was produced during a 13,800-mile journey; later, the film won the Palme d'Or at the Cannes Film Festival and an Oscar from the American Academy of Motion Picture Arts and Sciences.



# SeaLife®



## micro 2.0™

### Great pictures made easy

The new SeaLife Micro 2.0 makes underwater photography colorful and easy. Featuring a new 16MP SONY® CMOS Image sensor, full HD video, and easy set-up for underwater conditions. All in a fully sealed body that requires zero maintenance, only a fresh water rinse. Just submerge and enjoy.



Use with  SEADRAGON® lighting

-  16MP Resolution
-  1080p HD Video
-  WiFi Share
-  Flood Proof
-  130° Fisheye Lens
-  3+ hours

[sealife-cameras.com](http://sealife-cameras.com)

 [facebook.com/SeaLifeCameras](https://facebook.com/SeaLifeCameras)





Project AWARE

# Taking Ownership

Celebrate Earth Day 2016 and Adopt a Dive Site with Project AWARE

BY ALEXA WARD, COMMUNITY RELATIONS SPECIALIST, PROJECT AWARE FOUNDATION

Scuba instructor Virginie “Giny” Pinto was guiding a group of dive students on a routine scuba excursion when she was struck with excitement — she spotted a gigantic school of fish ahead of her in the distance. She signaled for her group to follow, and they began swimming in the direction of the fish with eager anticipation to identify which species was ahead. As they inched closer, their hearts sank. The species they had spotted wasn’t a school of fish at all — it was a swirling cluster of plastic bags.

Pinto was struck with despair. If she could misidentify the “school” of plastic bags as fish, what other marine animals might accidentally do the same, mistaking the marine debris for food or prey? Unfortunately, her fear rings true: Countless ocean animals are affected by marine debris every year.

From that moment on, Pinto decided she would take action against marine debris as aggressively as she could. At Oceans 5 Dive Resort on the Gili Islands, Indonesia, she has organized consistent weekly beach cleanups and Dive Against Debris surveys for the past four years (pictured). She has personally been involved in more than 50 Dive Against Debris surveys so far, and plans to engage in many more in the coming year. She has, in essence, adopted her local dive site.

Pinto explains that her favorite aspect of Dive Against Debris is not only the direct impact of removing debris underwater, but the added element of submitting survey results to Project



Give back this Earth Day with Project AWARE's new Adopt a Dive Site program.

AWARE. “It’s a great incentive to know that Dive Against Debris data is not only collected, but also recorded to be used to advocate for long-term, lasting change,” says Pinto.

Diving around Indonesia’s Gili Islands for the past 10 years, Pinto has witnessed the devastating impacts of pollution on the ocean environment. But in that time, she’s also had the opportunity to see how small efforts against marine debris can add up to big change. She believes in the power of underwater marine debris collection and data reporting to make a positive, lasting impact on the environment — preserving the scuba experience for future generations of divers.

This Earth Day, April 22, Project AWARE launches Adopt a Dive Site — a unique program designed to involve dive centers and dive leaders around the globe in ongoing, local protection and monitoring of our favorite underwater playgrounds. Like Pinto, you too can take action to protect your underwater playground: Visit [projectaware.org](http://projectaware.org) to learn more about the Adopt a Dive Site program and Dive Against Debris opportunities in your area.

## Conservation

### PLASTICS, PLASTICS EVERYWHERE

Unless there are major changes in the world’s plastic production, divers might face a scary reality: an ocean with as much plastics as fish.

A recently published Ellen MacArthur Foundation and World Economic Forum report estimates that by 2050 there will be more than 1.1 billion tons of plastics in the ocean, more than where it estimates the fish population to stand — at about 1 billion tons.

“Each year, at least 8 million tons of plastics leak into the ocean — which is equivalent to dumping the contents of one garbage truck into the ocean every minute,” says the report. “If no action is taken, this is expected to increase to two per minute by 2030, and four per minute by 2050.”

#### Plastics Production



2014  
311 MILLION TONS



2050  
1.124 BILLION TONS

#### Plastics to Fish Ratio



2014  
1:5



2050  
>1:1

The report, which was published in January and titled “The New Plastics Economy,” shines a light on ways to increase global prosperity while reducing demands on raw materials. Among its suggested practices are recycling, reusing materials, and depending on compostable packaging.

For more information, visit [ellenmacarthurfoundation.org](http://ellenmacarthurfoundation.org). — Andy Zunz



# A Group Effort

The next wave of ocean aid is coming from a surprising source: supporters pitching in via crowdfunding

BY BROOKE MORTON

## The Seabin Project

This garbage bin floats in marinas and other high-traffic areas to filter out plastic waste, plus oil, fuel and detergents. The work of two Australians, one a reformed plastics designer, it has already reached its goal on [indiegogo.com](http://indiegogo.com). Next up? The pair hopes to design a model manufactured from collected plastics. [seabinproject.com](http://seabinproject.com)

## The Ocean Cleanup

The promise is lofty: Boyan Slat, the 21-year-old Dutch student behind the Ocean

Cleanup, says that in 10 years his project will cut the Great Pacific Garbage Patch in half. V-shaped barriers funnel plastics to a platform that serves as a storage facility. The crowdfunding campaign ended successfully, but Slat still welcomes donations. [theoceancleanup.com](http://theoceancleanup.com)

## Great Barrier Beer

The name alone should garner support for the drinkable product from a Brisbane philanthropist seeking to save his country's backyard treasure; at least

half the proceeds benefit the Australian Marine Conservation Society. Originally launched on Indiegogo under the name the Good Beer Co., the project gave initial investors input on things like label design and the chance to taste-test beers — cheers to that. [thegoodbeerco.com.au](http://thegoodbeerco.com.au)

## Hornraiser

Facing a lack of government backing for research projects, University of Texas at Austin created its own crowdsourcing site called Hornraiser to



Bottoms up: the Good Beer Co.'s James Grugeon and Darren Kindleysides.

explore diverse subjects such as fossils and alcoholism. Mikhail Matz's coral genome mapping project didn't succeed in its \$15,000 goal, but he raised \$9,000 — and awareness that the site exists. [hornraiser.utexas.edu](http://hornraiser.utexas.edu)

Unattached  
and Available.



With everything from famed Looe Key Reef and the upright 210' freighter Adolphus Busch to more than 150 species of fish and 50 different kinds of coral, it's time to make a date to dive Big Pine Key and Florida's Lower Keys.

[fla-keys.com/lowerkeys](http://fla-keys.com/lowerkeys) 1.800.872.3722

BigPineKey  
and Florida's Lower Keys



Travel Savvy

# Street Smart

These delectable island dishes will draw even the most avid divers to the surface for a bite

BY TRAVIS MARSHALL



a reflection of the bountiful and fresh seafood available in Hawaii's offshore waters. And it's a dish found at all levels of the dining experience, from the fanciest restaurants in Honolulu to supermarket delis and walk-up counters en route to the beach.

## 4. Tacos, Playa del Carmen, Mexico

The taco is one of the world's quintessential street foods, and few dive spots do it better than Playa del Carmen. They are never hard to find, as the city has more than 400 registered taco vendors serving up flavors from all over Mexico, including traditional Yucatecan tacos with egg and pepitas, or more common meat fillings like carne asada and barbacoa.

## 5. Halo-Halo, Philippines

The Filipino sweet treat halo-halo is a classic walk-up-counter offering found not only throughout the islands, including dive spots like Boracay, but also in Filipino expat communities around the world. For the uninitiated, it can seem intimidating and unusual. The name literally means "mix-mix," fitting for this jumble of ice cream, shaved ice, evaporated milk, coconut, jackfruit, sweet yams and plantain, and often dollops of sweetened, preserved beans, among many other possibilities.

There isn't much that can convince divers to get out of the water, aside from rapidly approaching maximum bottom times. But the scent of spicy, succulent street food, served up local-style and wafting on the sea breeze might be a close second. We've selected some of our favorite roadside treats from dive hot spots around the world.

## 1. Jerk Chicken, Jamaica

Arguably the most well-known dish from the Caribbean is the fiery-hot jerk chicken that originated in Jamaica but is now found in

various forms throughout the islands. In Jamaica, the best roadside jerk-chicken spots start with a base marinade made from allspice, ginger, onions and, most important, searing scotch bonnet chillies. Then the chicken is cooked either on grill grates or directly atop green pimento wood laid over coals, which imparts an unmistakable flavor.

## 2. Bakso, Bali, Indonesia

Bali is perhaps one of the best dive islands in the world for street food. Throughout the island, vendors are constantly turning out delectable

treats like babi guling (roast suckling pig), marinated and chargrilled satay skewers, and more. Another local favorite is bakso, a ubiquitous and satisfying soup of meatballs in broth. The toppings are left to personal preference — hard-boiled egg, scallions, tofu, crispy-fried shallots and, of course, a hearty spoonful of spicy chili paste.

## 3. Poke, Hawaii

No dish captures the flavors of Hawaii quite like poke. The salad of raw-tuna chunks tossed with soy sauce, scallions and sesame oil is





Whale Trust Maui hopes to learn more about humpback whales by studying their vocalizations.

# Heart to Heart

Researchers work to link heartbeatlike sounds to humpbacks

BY PAIGE WILSON

It's been more than a decade since biologist Dr. Jim Darling first heard heartbeatlike sounds off the coast of Maui, Hawaii, on Feb. 12, 2005, but these mysterious noises have engulfed his studies with Whale Trust Maui ever since.

"I did not know what they were, and my initial reaction was to look around for a source," says Darling, who searched the sky for a passing helicopter and wondered if a submarine was lurking below.

The sounds were recorded again in 2013 — this time within a few yards of a pair of adult humpback whales, which are more well-known for their songlike vocalizations. Human hearing ranges from 20 Hz to 20 kHz, making the low 40 Hz sounds difficult to hear in anything but perfectly calm ocean conditions.

If the sounds are proved to be coming from humpbacks, "it would mean there is another channel of communication occurring on the breeding grounds that, to date, we have not been aware of in our interpretation of behavior patterns," says Darling.

While no one is certain if the thumping noise is coming

from humpbacks, the circumstantial evidence has stimulated interest among scientists. Whale Trust Maui, a scientific research nonprofit, wrote on its website: "If verified ... it could completely change how we view and interpret whale behavior on the breeding grounds."

Darling added that if humpbacks are the source, he would then want to look at typical interactions with the whales to see if this communication could answer some of his questions about the whales' behavioral patterns.

"Confirming that humpbacks are making the sounds is probably just going to require a larger sample of the sounds, and if in each case they are recorded within tens of meters of humpbacks — eventually the circumstantial evidence will suffice," Darling said.

Whale Trust Maui will also see if others recording marine noises in Hawaii have heard similar heartbeat sounds during times of the year when humpbacks — which visit Hawaiian waters annually from November to May — are not in the local waters.

**Listen In**  
To hear the sound and learn more, visit [whaletrust.org](http://whaletrust.org).



*Puerto Rico*  
THE ALL STAR ISLAND

DIVE RIGHT IN...  
5 nights + 3 days of diving

PARGUERA

Villa Parguera  
Paradise Divers

Add \$27pp for Sea View  
Free WiFi  
from \$514\*

\* TRANSFERS NOT INCLUDED

FAJARDO

El Conquistador  
Casa Del Mar

Catamaran to Palomino Island  
Free WiFi  
from \$965

VIEQUES

W Retreat and Spa  
Black Beard Sports  
Shore and Boat Dives  
from \$1,354



800-328-2288

[sales@caradonna.com](mailto:sales@caradonna.com)

Rates are per person, double occupancy, include hotel taxes and service charges and are subject to availability and standard terms and conditions.

CSOT#2111993-40 • WSO#603254369 • FSOT#38781

Tanya Burnett

1.

Polyclad flatworms use vibrant colors to deter predators; however, one was found to also use **high levels of deadly tetrodotoxins to kill its prey.**



2.

The deep-sea worm, *Escarpia laminata*, is **one of the longest-lived animals on Earth.** Some may still be alive from the time of Machu Picchu's construction in the 1450s. Say what?

3.

A parasitic tapeworm **as long as a Boeing 737-200 airplane** was once found living inside a sperm whale's gut.

4.

Some marine leeches carry **blood-borne parasites from fish to fish**, much like mosquitoes carry malaria between humans.

5.

The colorful **bristles, or crowns, of Christmas tree worms are feeding structures that double as gills** (pictured); the rest of the worm is safely protected inside the hard-coral structure.

6.

The **Pompeii worm** is the world's most heat-tolerant complex organism. With one end in 72°F water, the other can sit in 176°F, which is hot enough to boil water at the summit of Mount Kilimanjaro.



7.

The bobbitt worm is the ultimate predatory worm; at 10 feet long and **with mouth parts on hair-trigger**

**release, it can catch and devour fishes** usually too fast for a worm.

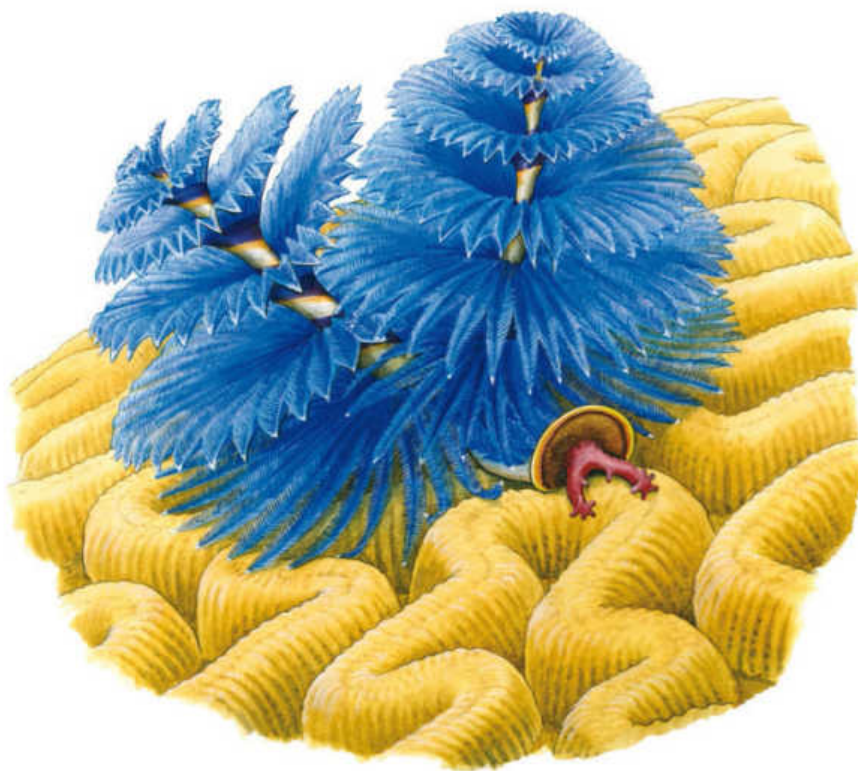
8.

The polychaetes, or bristle worms, are one of the largest and most ancient groups, containing more than 8,000 species. Their

11.

The smallest marine worms are a kind of nematode that measures **as long as a piece of paper is thick.**

*Follow Richard Smith's under-water adventures at [oceanrealmimages.com](http://oceanrealmimages.com).*



Species

# The Marine Worm

Marine worms aren't your garden-variety earthworms; they are a heady mix of terrifying, grotesque and endlessly fascinating.

BY DR. RICHARD SMITH

fossil record **dates back to more than 500 million years ago.**

9.

The bootlace worm is one of the longest organisms on Earth; one washed ashore in Scotland in 1864 **measuring 180 feet.**



10.

The giant tubeworm inhabits hydrothermal vents of the Eastern Pacific more than a mile deep. **In two years it can colonize a new site and reach almost 5 feet in length.**



# Get the Picture

How do we look from a dolphin's perspective?

BY ANDY ZUNZ



It's been a mission of sorts to Jack Kasewitz. The Miami-based researcher, who has a passion for dolphin communication, wondered what echolocating dolphins "see" when they "ping" an object with their clicks, chirps and whistles.

Kassewitz recorded the dolphins echolocating on specific objects, including a person. British scientist John Stuart Reid then played those recordings back through a device called a CymaScope, which "makes sound visible," as sonic vibrations create patterns in a small pool of water. Reid captured those patterns on video, and the team discovered 2-D images — which were later converted to 3-D computer models — in the patterns that matched the original objects.

The resulting image (above) is similar to what people see when ultrasound is used to image a fetus, says Kasewitz.

"To view something for the first time that no one has ever seen before is both humbling and exciting," he says.

Some scientists have pointed to a lack of peer review when discussing the research; as we went to press in early February, Kasewitz was working to submit a paper on his findings for publication.

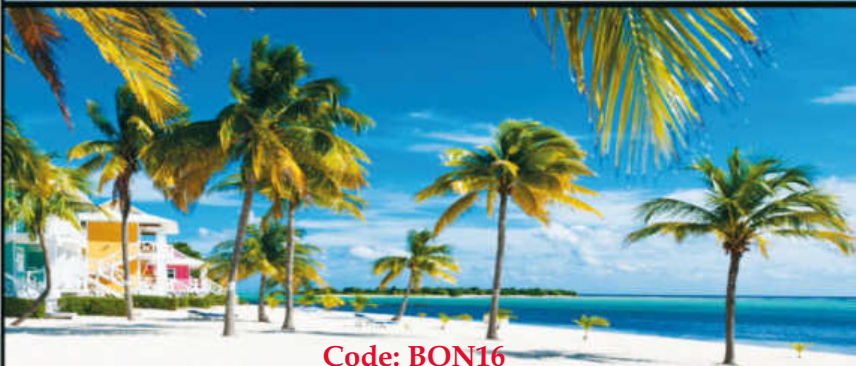
"The U.S. Navy and bass fishermen use sonar to image objects in the water every day," says Kasewitz. "So the idea that there are images in dolphin echolocation shouldn't shock us. How the dolphins perceive, interpret or perhaps share them remains to be determined. There's a lot more work to be done."

For more info: [speakdolphin.com](http://speakdolphin.com)



**SOUTHERN CROSS CLUB**  
LITTLE CAYMAN

FISH & DIVE RESORT



**Code: BON16**






*Barefoot Elegance*  
**DIVE FISH KITE**

[www.southerncrossclub.com](http://www.southerncrossclub.com) 1-800-899-2582



DIVE TECH APPROVED

## SIZZLING SUMMER SPECIAL

**FAMILY OR FRIENDS PACKAGE DIVETECH @ LIGHTHOUSE POINT DIVE RESORT**

7 nights' accommodation in 2-bedroom luxury condo • 6 days of 2 tank boat trips (certified divers)  
PADI E-Learning Open Water Course (students) • 4 days of 2 tank boat trips (once certified)  
FREE dive on the Wreck of the Kittiwake • 2 for 1 World Famous Stingray City Dive  
Unlimited Shore Diving @ Lighthouse Point • Round Trip Airport Transfers

**SUMMER – APR 16-SEPT 3, 2016 (7th night free/6th dive day free)**  
**\$1200 per adult diver / \$1300 per child (student) / \$1400 per adult (student)**  
 (based on quad occ./kids 17 yrs & under/includes 25% discount on kids diving)







(877) 946-5658  
reservations@divetech.com  
**[www.divetech.com](http://www.divetech.com)**

Photo Courtesy of Greg Beyette






*Dive Life*

# Caribbean Seal

Tag along for the ride as your little divers take the mission of a lifetime with PADI and Kids Sea Camp as Seal Team members

BY MARK EVANS



Underwater photography is among the activities available for eager Seal Team members.

**S**o, will I be really diving this time?" "Will there be sharks?" "How many other kids are going to be in the Seal Team?" "Will we be in the sea?" "Will I see sharks?" "Will I get to night dive?"

I was getting a serious feeling of déjà vu as my 8-year-old son fired an endless barrage of questions at me. Was it really only three years ago when, as a pint-size 5½-year-old, he was asking me many of

the same queries before embarking on his SASY and snorkeling adventures at a Kid's Sea Camp in Grand Cayman?

As a water-loving 8-year-old, he'd moved up into the PADI Seal Team category within the Kid's Sea Camp organization, something he'd been counting down the days to since he first stuck his head underwater with a mask and snorkel on. Got to hand it to



PADI — the pool-based Seal Team is a fantastic introduction to diving for children aged 8 to 10. Luke had completed his Bubblemaker just after his eighth birthday at the Blue Planet Aquarium in Ellesmere Port in northern England, but he couldn't wait to get placed into the different AquaMissions offered as part of the Seal Team experience. He'd be completing the initial five AquaMissions during his week at KSC, and once he'd notched up the 10 Specialty AquaMissions after returning home, he would hold the title of Master Seal Team Diver. Now I don't know about you, but I'd like to be a Master Seal Team Diver — that sounds so much cooler and more clandestine than adult certifications!

### Check Your Buddy

Our home for the week on Bonaire was Buddy Dive, a long-established resort with an excellent reputation and an ever-growing number of repeat guests. You only have to go down to the on-site dive center and see staff members



## Got to hand it to PADI — the pool-based Seal Team is a fantastic introduction to diving for children aged 8 to 10.

who have been there for longer than a decade to know that you are somewhere special — employees, especially diving professionals, do not hang around one location unless it has a lot going for it.

Buddy Dive and Kid's Sea Camp have had a long relationship, and there are two separate weeklong KSC events every year at the resort. Dive center manager Augusto Montebun and his dedicated team have got it nailed, effortlessly keeping hordes of children from 5 years old up into the teens happy and occupied, as well as marshaling masses of parents as they head off to shore and boat diving.

There was one group of SASY kids, Luke's Seal Team, and then various pockets of teens doing PADI Junior Open Water Diver, PADI Adventure Dives, and even PADI Rescue Diver. Throw into the mix several adults who were also completing certification courses, and three boatloads of qualified mom-and-dad divers leaving every morning, and you had a recipe for chaos, but dive shop staff had it all running as smooth as clockwork.

The parents had it easy during the day. Children of all ages were dropped off to their various staff

members at 9 a.m., and then weren't picked up again until the middle of the afternoon. We didn't even get to see the kids at lunch, as the youngsters had their own dining room — with its own child-friendly menu — set up in the breakfast area, while we adults relaxed in the pool bar and restaurant with our own meals — and enjoyed the ocean view.

Although afternoons offered the opportunity for some family time exploring the island or hanging out by the pool, there was still plenty of planned events going on during the rest of the day throughout the week, with a couple of interesting evening slide-show talks in the bar from the resident photo pro, a buffet barbecue with a mouthwatering selection of meats, and a gorgeous sunset cruise on a sailing vessel that ran the full length of Bonaire, to name just a few.

### Seal Team Eight

Thankfully, it wasn't just Luke who was near DEF-CON 5 with excitement; his seven fellow wannabe Seal Teamers were equally bouncing off the walls when we deposited them with their instructors on the first morning. I have nothing

### BACK-STORY

#### And the Rest Is History

KSC began with a few notes scribbled onto a napkin. "It started over 15 years ago. A few conversations, some notes on a napkin. I thought it should be a simple concept. If you have a family, love the ocean, diving, beaches, snorkeling, travel, and want to meet like-minded people, then you should have someplace to go — and so Kid's Sea Camp was created," says Margo Peyton, founder of KSC. From humble beginnings, Kid's Sea Camp has grown into a business spanning multiple countries, with Margo and her team running land-based trips to Roatan, Palau, Bonaire, Utila, Fiji, St. Lucia, Yap and the Philippines, and even Galapagos on a liveaboard. Grenada, Turks and Caicos, Dominica, and the Maldives are coming online in 2017.

[familydivers.com](http://familydivers.com)

## GET AWAY

### The Path Less Trodden

Shore diving in Bonaire is a walk in the park. While Luke was kept busy, we ventured out in a pickup to notch some adult dives, and that is one of the great things about diving in Bonaire — the freedom to plan your own dives and conduct them at your own pace. The shore-diving sites along the western coastline are all sheltered and well-posted; just drive along and keep an eye out for football-size stones painted bright yellow with the name of the dive site. When you spot the one you want — or a nice quiet site with no other divers! — just pull over into the parking area, kit up and get in. Dive for however long you want, in whatever direction you want. No wonder the island is known as the shore-diving capital of the world. Entry and exit for nearly all of the sites is over dead and broken coral, so sturdy boots are a must, and just be aware that some locations are easier than others, so watch your footing and take your time. [tourismbonaire.com](http://tourismbonaire.com)  
[familydivers.com](http://familydivers.com)

but admiration for Elsy and her fellow PADI Pros who were tasked with herding eight ultrahyper children into the pool, and then getting them calm and focused enough to don masks, fins, BCs and regulators to venture underwater.

Elsy is a seasoned veteran when it comes to handling kids, though, and so she and her fellow instructors let Luke and his friends burn off some energy playing in the pool and snorkeling before moving on to the AquaMissions. They broke up the day with more play sessions in between the diving — after all, their charges were children, and too much structured activity could turn them off of diving, when what we wanted was for them to become hopeless addicts like us.

Seeing the children setting up and checking their equipment — which comprised dinky BCs mounted on five-liter cylinders, and regulators with small mouthpieces — brought a smile to the faces of all of the proud parents, and soon they were all confidently assembling and running through pre-dive checks like tiny veterans, under the watchful eyes of their instructors, who expertly kept them in the zone when their minds started to wander.

In the water, throughout the five different AquaMissions, Luke and his friends repeatedly practiced water entries and exits; equalizing; mask clearing; regulator retrieval; swapping from snorkel to reg and back again; and buoyancy control, including fin pivots. They sampled some of the Specialty AquaMissions that become available after completing these initial five, such as taking photographs of a myriad of plastic divers and marine life with SeaLife Micro HD+ cameras.

### Graduation Day

It is safe to say that the Seal Team was a major hit with all the children. The final “graduation dive” in the sea alongside their parents was a serious highlight. Buddy Dive has a convenient shallow reef right off the dock — it is in essence a large swimming pool — and so the instructors took the Seal Team in two at a time for their very first sea dive.

Luke demonstrated some neat buoyancy control and a masterful trim, and happily pointed out parrotfish, blennies, butterflyfish and angelfish, though I thought his eyes might pop out of his head when a large tarpon swam right in front of him.

“So what AquaMission did you enjoy the most?” I asked, as we tucked into hot dogs toward the end of the week. Gulping down a mouthful, he didn’t miss a beat: “The AquaMission with the camera, definitely. I liked using the camera underwater, and I was pretty good with it. I am going to do your job when I get older.”

### 2016 Kids Sea Camp Event Weeks

**June 16-23:** Australia Great Barrier Reef with Mike Ball Expeditions

**June 18-25:** Grand Cayman for PADI Family Week at Lighthouse Reef resort

**June 25 - July 2:** Bonaire at Buddy Dive Resort

**July 2-9:** Roatan at Mayan Princess Dive Resort

**July 9-16:** St. Lucia at Anse Chastanet Resort

**July 23-30; July 30 - Aug 6:** Fiji at Beqa Lagoon Resort

**July 30-Aug 6:** Bonaire at Buddy Dive Resort

**July 28 - Aug. 13:** Philippines (multiple sites)

**Aug 6-13:** Yap at Manta Ray Bay Resort

**Aug 13-20:** Palau at Palau Royal Resort/Sam’s Tours

Note: Dates and availability are subject to change.



*Their charges were children, and too much structured activity could turn them off of diving, when what we wanted was for them to become hopeless addicts like us.*



**Just Surfaced**  
The latest gear  
on dive-store shelves



### D6i Novo Stone

**Suunto**

The sleek styling of the D6i Novo Stone will turn heads whether you're giant striding off a dive boat or wearing it in the office. But the D6i Novo — which also comes in white, black and a military-inspired "stealth"

version — is more than just another pretty face. There are four dive modes, a tilt-compensating compass, and a wireless air-integration option that displays air pressure. The glass that protects the display features anti-fingerprint coating.

**\$1,174.95;**  
**suunto.com**



### SMS Katana Hollis

Unveiled at DEMA 2015, this compact side-mount system was designed with the help of cave instructors and is meant for cave divers, but sidemount is a trend that's catching on among serious rec divers too. This particular version, though,

made from 1,000-denier Cordura, is built to withstand a cave's extreme environment. The webbing mounted beneath the bladder routes through the wing and aids in keeping it snug to the diver's body. The buoyant lift is 30 pounds. **\$599;**  
**hollis.com**

## BIG BOATS...small groups



**345-945-5132**   **dfd@candw.ky**   **www.donfosters.com**



**Cayman's premier dive shop for over 30 years**

**Ask about our dive packages!!**



**EXPERIENCE 12  
EXCITING  
SHIPWRECKS OFF  
FLORIDA'S  
PANHANDLE!!**

**"Take only pictures,  
leave only bubbles."**

The Florida Panhandle Shipwreck Trail consists of 12 unique shipwrecks along Florida's Panhandle, ranging in depth from 25 to 212 feet.

Dive, fish or snorkel the pristine, crystal-clear waters of Northwest Florida on these incredible wrecks. Obtain an official Panhandle Shipwreck Trail Passport from participating dive shops to track your journey along the trail!

**FloridaPanhandleDiveTrail.com**



Photo: Barry Shively

**PRO TIP**

DON'T JUST HUNT FOR SUBJECTS. EXPERIENCED SHOOTERS LOOK FOR BACKGROUNDS TOO.

# Images

*Everything an underwater photographer needs to shoot amazing images*

Frame against open water, and use a fast shutter speed and closed aperture for black backgrounds.



MACRO

ALEX MUSTARD

The best things in life come in the smallest packages. Many photographers certainly agree, because the underwater world becomes even more fascinating when you learn to dive slow, look close and appreciate the little things. Macro images usually start with a great subject, but it is often the background that completes the job, transforming the average into exceptional. Black backgrounds should be your go-to option for graphically powerful pictures.



# DIVE INTO FULL COLOR

## VTX

The VTX is the first dive computer to feature an ultra-bright, full-color OLED display, Bluetooth 4.0 technology, wireless air integration, and Oceanic's patented Dual Algorithm® crowning it the new benchmark for modern dive computers.

To learn more about the VTX, or to find an authorized Oceanic dealer near you, visit [oceanicworldwide.com](http://oceanicworldwide.com).

## FREE BUNGEE WRIST MOUNT

Visit [oceanicworldwide.com](http://oceanicworldwide.com) for details



  
**OCEANIC**  
[oceanicworldwide.com](http://oceanicworldwide.com)

**Photography Tips**

## Background to the Fore

### **1 Wishes Denied**

The oceans are full of wondrous macro subjects, many of which have such gaudy colorations and intricate designs that you'd think they were designed solely to be photographed. Understandably, photographers get obsessed with them, often turning up at dive resorts with wish lists. It is much better to be focused on images, not subjects. A common subject that offers a great background always trumps a rare species with a poor background.

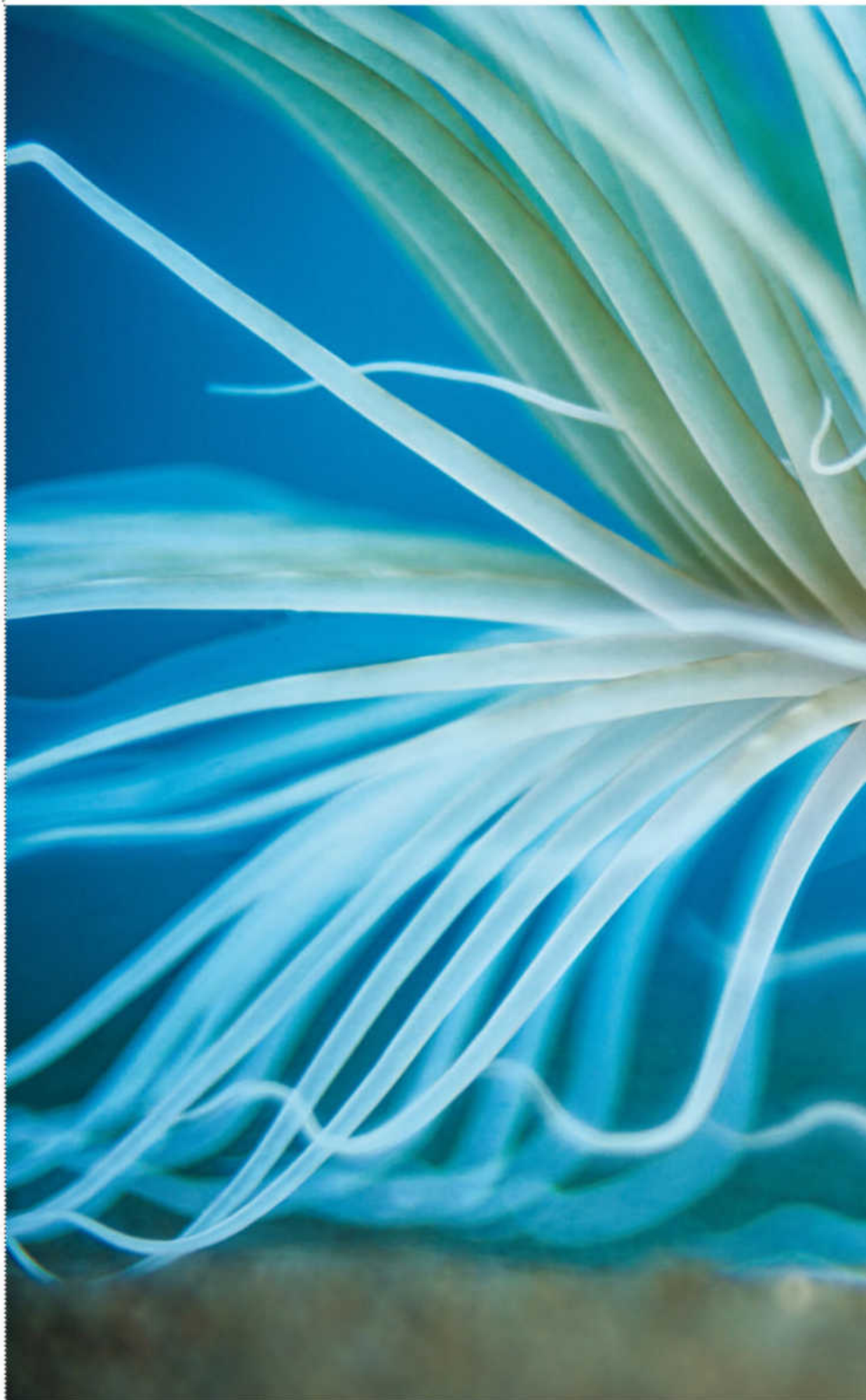
### **2 Black and Blue**

Backgrounds are essential for success, but they must be cast in the role of supporting actor, as opposed to the subject. Framing subjects against open water creates clean, nondistracting backgrounds. Use a closed aperture and fast shutter speed to make this an eye-catching black (strobes will provide ample light for the subject). Alternately slow the shutter speed, bump up the ISO, and open the aperture to turn the background blue (or green) for a more naturalistic feel.

### **3 Beautiful Bokeh**

You can also quell background by opening the aperture to reduce the depth of field and transform distracting details into a smooth blur. In this extreme example from the Philippines, I opened my aperture all the way to  $f/2.8$  to defocus much of the complicated detail of this tube anemone. Photographers use the Japanese word *bokeh* (pronounced to rhyme with OK) to describe the pleasing blurred look of backgrounds.

ALEX MUSTARD









## Introducing New 2016 Sea Dragon LED Lights

### Sea Dragon 1500 Photo/Video Light

Bring rich colors into your underwater photos and videos, the light packs a powerful 1500 lumens across a 120° beam angle. 80 CRI\* with color temperature of 5700k.  
**\$299.95**



### Sea Dragon 2500 Photo/Video Light

A constant, high-powered beam with the color and intensity of natural sunlight. The best underwater LED light for stills and video. 90 CRI\* and color temperature of 5000k at a wide 120° beam angle.  
**\$499.95**



### Sea Dragon 2100 Photo/Video/Dive Light

Versatile dual beams provide 2100 lumens across a wide 100° beam angle and instantly transforms into an 800 lumen 15° spot with a push of a button.  
**\$499.95**



### Sea Dragon 2000 Photo/Video/Dive Light

2000 lumens through six Cree XM-L LEDs. Features a 100° beam angle with 60 minutes of burn time at full power. Auto-Flash detection mode.  
**\$399.95**



Lights include Flex-Connect grip, tray, GoPro Camera adapter.  
MSRP prices shown. \*CRI- Color Rendering Index

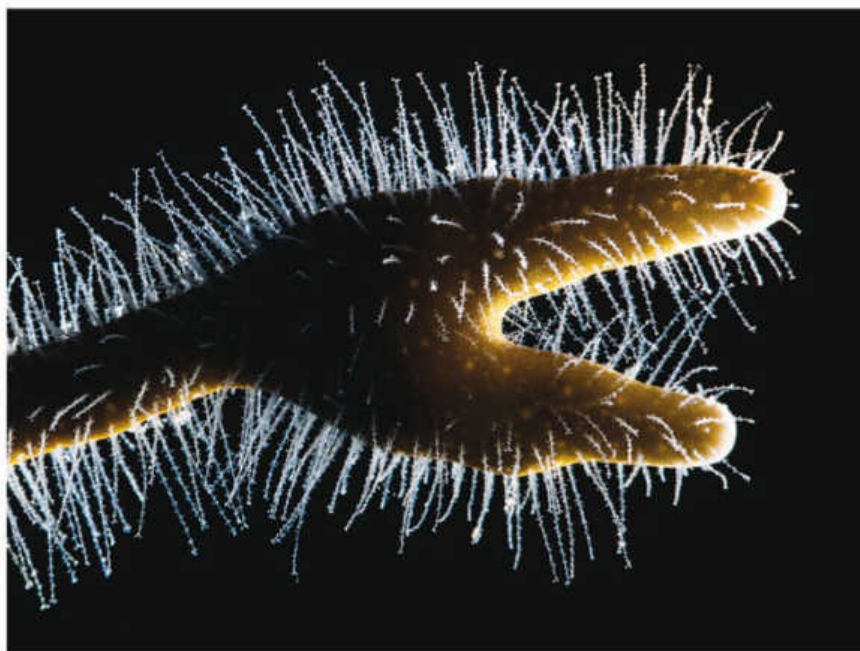
sealife-cameras.com

/SeaLifeCameras  
@SeaLifeCameras

@SeaLifeCameras  
/SeaLifeCameras

# Macro Lighting

Shooting macro images puts a premium on precisely controlling strobes to show off subjects in their best light and produce creative effects



Backlighting transforms subjects into special images, like this fire coral off Grand Cayman.

## TIP Beginner

Soft and even lighting makes the color and detail of a macro subject shine. This type of lighting is easily produced: Position your strobe or strobes close to the port and pointing forward. Flat light isn't boring; it suits almost all macro subjects. Both pictures on the previous pages were lit this way.

## TIP Intermediate

Once most photographers have bought their second strobe, they rarely go back

to shooting with one. This is a big mistake for macro. One strobe positioned above the port will give pleasing, flat lighting. Moving it around totally changes the quality of the light: The more

*Moving our strobe around behind the subject produces backlighting. This really suits filamentous and translucent critters, such as those found on muck dives, like hairy frogfish.*

it's angled across the subject, the more intense the textures and shadows appear.

## TIP Advanced

Moving your strobe around behind the subject produces backlighting. This really suits filamentous and translucent critters, such as those found on muck dives, like hairy frogfish. The strobe should be positioned on a long arm beyond the subject, aimed to light the back of the subject, but most important, the strobe must be out of view of the lens.

## THE AUTHOR

**Dr. Alex Mustard** is a marine biologist who has been a full-time underwater photographer since 2004. His latest book, *Underwater Photography Masterclass*, is out now. To see more of his work, visit [amustard.com](http://amustard.com).

ALEX MUSTARD



# The Islands of Hawaii

# Diving Paradise

## DIVE MAUI

### Featured Dive Site: 1st Cathedrals

We lead small groups to the Islands of Lanai to dive sites teeming with marine life. 1st Cathedrals is an underwater cavern. Rays of light illuminate the cavern floor and large lava rock, referred to as the "Altar," that created the opening when it fell. The entrance reaches 50', with an archway large enough to drive our boat through. The cavern has many small holes allowing light to create a stained glass effect on the walls. You will see turtles, sharks and multitudes of fish in 80' to 100' visibility, and swim through a cavern wall to discover nudibranchs among pink and orange cup corals.

808-661-7333

Toll Free 1-866-529-2544

[goscubadivemaui.com](http://goscubadivemaui.com)

[facebook.com/HawaiianRaftingAdventures](https://facebook.com/HawaiianRaftingAdventures)



DON'T  
MISS  
THIS



### Jack's Diving Locker

Join the friendly crew of Jack's Diving Locker on the Kona Coast of Hawaii with healthy coral reefs, lava formations, and big animals – dolphins, whales, sharks, and manta rays!

808-329-7585

[dive@jacksdivinglocker.com](mailto:dive@jacksdivinglocker.com)

[www.jacksdivinglocker.com](http://www.jacksdivinglocker.com)



### Dive Oahu

PADI 5 Star IDC Gold Palm Resort. Do Your IDC in Hawaii! Daily Boat Charters to Shipwrecks: Sea Tiger/YO-257/San Pedro. Three minutes from Waikiki. ScubaPro, Tusa, Aqualung. Rebreather Friendly. Mark 6 rentals.

808-922-DIVE

[DiveOahu.com](http://DiveOahu.com)



### Dive Maui

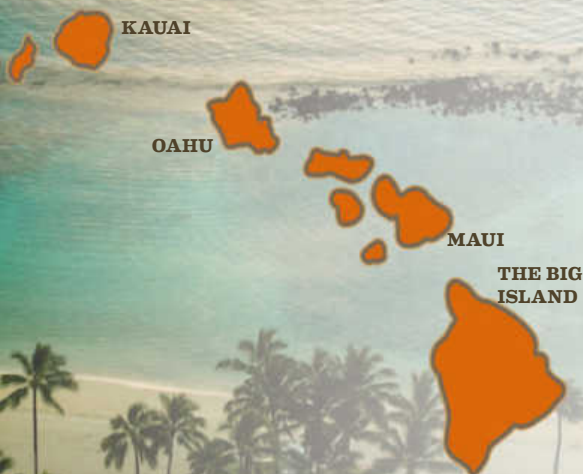
Full service Lahaina dive shop, great deals on Dive Gear, sales and rentals, two tank Lanai boat dives from our custom built 37' RIB Hoku located at 1223 Front Street in Lahaina, GoPro Dealer and Underwater Camera systems for sale.

808-661-7333

Toll Free 1-866-529-2544

[goscubadivemaui.com](http://goscubadivemaui.com)

[facebook.com/HawaiianRaftingAdventures](https://facebook.com/HawaiianRaftingAdventures)



### Seasport Divers

Full service dive shop specializing in SCUBA tours and Certification Courses. We are located on the south shore of Kauai. We offer 2 dive charters 365 days a year while also running seasonal trips to the Forbidden Island of Niihau.

808-742-9303

[seasportdivers.com](http://seasportdivers.com)



### Kona Honu Divers

Join our expert crew for the best diving in Kona. Spacious 46' Custom dive boat running 2 Tank morning charters and Evening Manta Dives. Advanced diving including the world famous Black-Water Dive. All levels of instruction available. Photographer friendly.

888-333-HONU (4668)

808-324-4668

[konaonudivers.com](http://konaonudivers.com)

# Gear

*We get gear wet so you don't have to — here are this month's Editor's Picks*

## 1. X1 Bladefin Atomic Aquatics

Firm side rails and a shorter, stiffer blade deliver quick power and performance, even in alternate kick styles. The buckles snap off easily for quick doffing. **\$119; atomicaquatics.com**

## 2. Seco Boots Akona

The Seco's sole has tiny holes that let water drain to eliminate sloshy feet when you exit the surf. They're rugged enough to protect you from sharp rocks, and are available in 3 mm and 6.5 mm. **\$52 (\$58 in 6.5 mm); akona.com**

## 3. Aquaride Blue Pro Cressi

The Aquaride's roomy pockets stow gear out of surf's way, and the wrap-around air cell offers support for rough water. The weight-pocket handles stay secure and out of the way for swims onto the beach. **\$469.95 cressiusa.com**

## 4. Titanium Shears Dive Rite

These titanium-coated shears make short, safe work of tough cuts, and the soft sheath stows them securely with multiple mounting options. **\$30 diverite.com**

## 5. VTX Oceanic

The full-color display has

## Shore Diving

*Simplicity and self-reliance are the essence of shore diving; look for the same in your gear.*

**BY ROGER ROY**

adjustable intensity and auto-dim for easy reading on the surface or down deep. There's hoseless air integration for up to four gas mixes. **\$999.95 \$1,299.95 (with transmitter) oceanicworldwide.com**

## 6. Dry Bag 50L Scubapro

Heavy-duty tarpaulin material with taped seams keeps this bag dry. It has pockets for small stuff and handles that double as backpack straps. Also available in a 120- and new 25-liter size. **\$107 scubapro.com**

## 7. Titanium 5 Overall Camaro

The smooth, seamless, titanium open-cell lining dries on a surface interval, and the diagonal front zip is easy to reach (pictured opposite). **\$299.95 camaro.at**







**DIVE  
SAFE**

**Know the Hazards** Entry and exit can be the most challenging parts of a shore dive, with breaking waves or underwater obstructions coming into play. Find out everything you can about the site before you dive, and never hesitate to call off your dive if conditions aren't quite right before you head into the water.

# Training

*Best practices, tips and advice to make your dives safer and more fun*

Learn what causes panic — and how to deal with it — to avoid dangerous situations underwater.

## Panic Button

**G**oogle sayings for “cool,” and you’ll find a plethora of results that could apply to people who strap on tanks, giant-stride off the back of the boat, and drop down into the ocean to explore its wonders: cool customer, cool as a cucumber, and cool, calm and collected. But when a diver panics underwater, you can throw those sayings — and the diver’s even-keeled demeanor — overboard.

You may have seen at least one case of panic in a dive buddy — a wide-eyed look, a desperate tug to get your attention, a rapid ascent. And if we’re being honest, most of us have personally experienced at least a momentary bout of anxiety. But if you feel panic rising, it’s important to keep small things from snowballing into an out-of-control disaster.

“Recognizing the warning signs is the best method to proactively defuse a panic situation,” says Kell Levendorf, dive accident investigator for Dive & Marine Consultants International in Florida. If you notice a buddy panicking, “you must be prepared and practiced to control the fight-or-flight mentality by securing the regulator,

ILLUSTRATION: ALEXANDER WELLS/FOLIOART.CO.UK





# CELEBRATE PADI'S 50<sup>TH</sup> ANNIVERSARY

AND BRIDGE YOUR PASSION FOR DIVING  
TO UNDERWATER CONSERVATION



Get the new Project AWARE limited edition PADI  
50th Anniversary certification card to support  
Project AWARE's ocean protection efforts.

Visit [projectaware.org](http://projectaware.org) to learn more.



PADI's preferred nonprofit partner.

## WHAT IS PANIC?

Understanding the characteristics of panic attacks and panic disorder.

### Panic Attack

- 1 Palpitations, pounding heart or accelerated rate
- 2 Sweating
- 3 Trembling or shaking
- 4 Sensations of shortness of breath or smothering
- 5 Feeling of choking
- 6 Chest pain or discomfort
- 7 Nausea or abdominal distress
- 8 Feeling dizzy, unsteady, lightheaded or faint
- 9 Feelings of unreality or being detached from oneself
- 10 Fear of losing control or going crazy
- 11 Fear of dying
- 12 Numbness or tingling sensations
- 13 Chills or hot flashes

### Panic Disorder

- 1 Recurrent unexpected panic attacks
- 2 At least one of the attacks has been followed by one month or more of one or more of the following: persistent concern about having additional attacks; worry about the implications of the attack or its consequences (e.g., losing control, having a heart attack, "going crazy"); a significant change in behavior related to the attacks
- 3 The panic attacks are not due to the direct physiological effects of a substance (e.g., drug abuse, a medication) or a general medical condition (e.g., hyperthyroidism)
- 4 The panic attacks are not better accounted for by another mental disorder, such as social phobia, etc.

controlling buoyancy, and safely aborting the dive," Levendorf says.

And if you are being overwhelmed by panic, "the best thing to do is stop what you are doing, take a deep breath, and start to think about what it is you are dealing with," says Liz Parkinson, an instructor with Stuart Cove's Dive Bahamas.

Sometimes this is easier said than done, and as David F. Colvard, M.D., and Lynn Y. Colvard, Ph.D., reported in "A Study of Panic in Recreational Scuba Divers," there are important distinctions to be made in understanding panic.

### Losing One's Cool

The causes of panic underwater vary from divers struggling with equipment problems and task overloading to strong currents and dangerous marine life. Throw in things like poor fitness, peer pressure and fear of the unknown, and you've got the recipe for potential disaster.

In 2000, David Colvard and Lynn Y. Colvard, with support from *Sport Diver's* sister magazine *Scuba Diving*, undertook a multiyear study of thousands of divers to examine the incidence of panic while diving and the reasons why divers panic.

"We were impressed with how eager divers and instructors were to talk about their panic dive experience and how much they wanted to help us understand what had happened to them," says David Colvard.

Overall, 37 percent of female recreational scuba divers reported a panic experience during a dive, while only 24 percent of male divers reported one.

"We categorized the divers into two groups: those with a history of panic prior to diving and those with no history prior to diving. We

## EASY STREET

Struggling with underwater anxiety? These dive sites will help build your confidence and skill set.

### 1. Bonaire

"Do not dive sites where you don't feel comfortable with water conditions, entries and exits, profiles, or factors that can make you feel stress," says Pepe Mastropaolo, Buddy Dive course director. He points to the resort's house reef as a good example of the conditions that are ideal for new divers: "Easy entries and exits (with north and south ladders), a sandy, shallow terrace with abundant marine life and plenty of references (lines, mooring blocks) to keep divers oriented and aware of the exit point." [buddydive.com](#)

### 2. Key Largo, Florida

The deep wrecks like *Spiegel Grove*

might get a lot of attention, but Key Largo diving can offer loads of skill-building bottom time on shallow sites like Molasses Reef, where divers find goliath grouper, snapper and turtles. [seadwellers.com](#)



### 3. Lighthouse Point, Grand Cayman

This is walk-in diving at its finest. The easy — and enjoyable — entry from Lighthouse Point Dive Resort to the mini wall makes this dive perfect for new divers. "You can stay on top of the mini wall in 40 feet of water, or drop down to 65 feet and fin over to the Guardian of the Reef statue," says Jo Mikutowicz, managing partner of the on-site dive center, Divetech. [divetech.com](#)

### 4. Nassau, Bahamas

"The James Bond wrecks are both at 40 feet and are fun dives for beginners," says Liz Parkinson of Stuart Cove's Dive Bahamas. She's referring to the Tears of Allah wreck, from the film *Never Say Never Again*, and the scaffolding structure of the Vulcan Bomber used in *Thunderball*, which were sunk off Nassau. "There's lots of growth, fish and turtles to look at. We also have our coral nursery set up there," says Parkinson. [stuartcove.com](#)

### 5. Edithburgh Jetty, South Australia

Climb down stairs and then walk into this colorful site in Gulf St. Vincent. The pier pilings are plastered in tunicates and sponges, and you have the chance to encounter leafy seadragons. [adelaidescuba.com.au](#)

subdivided them into those who had a panic on a dive, and those who had not," says Colvard. "Age, years diving, certification level and lifetime number of dives were similar for each group."

The Colvards found that male divers with a prediving history of panic were 1.9 to 2.7 times as likely to panic than those without a prior history; females were 1.4 to 2 times as likely to panic than those without a prior history.

### Why It Happens

Panic is a sudden, uncontrollable surge of overwhelming anxiety and fear, often accompanied by

wildly irrational thinking and behavior.

"It's something that even a seasoned diver can experience," says Parkinson. "Many factors can lead to panic — misplaced equipment, rough weather conditions, diving in a new location, losing your buddy underwater."

The Colvards had to first define what they meant by "panic" before conducting their study. "Because panic can be an imprecise or vague term used in a casual sense, the survey defined a panic experience as 'an intense fear of losing control or dying,'" says David Colvard. "Consistent with a panic





Divers who panic might bolt to the surface or forget basic and easy lifesaving techniques.

attack as defined by the APA in DSM-IV (see “What Is Panic,” on page 34), the essential feature of a panic attack is a discrete period of intense fear or discomfort that is accompanied by at least four of 13 somatic or cognitive symptoms ... often accompanied by a sense of imminent danger or impending doom and an urge to escape ... or desire to flee from wherever the attack is occurring.”

In other words, part of what the Colvards wanted to know is whether the

diver made a rapid ascent or another dangerous action in response to feeling panicked.

“Most divers who panicked during a dive reported they remembered their training in how to deal with panic, and used that training,” says David Colvard. “Eighty-five percent of those who panicked while diving did not make a rapid or uncontrolled ascent. Even among the 15 percent who made a rapid or uncontrolled ascent, only 5 percent of males and 4 percent of females reported suffering from symptoms of decompression illness.”

That’s the good news. But the reality is that it’s a scary feeling to be panicked or to try to help a buddy who is panicking underwater. So how do you deal with it?

### Scared Stiff

“Divers who panic sometimes breathe too fast and hard, and may bolt to the surface or forget basic and easy lifesaving techniques that they learned in their Open Water Diver course,” says Jo Mikutowicz, managing partner of Divetech on Grand Cayman. Parkinson underscores Mikutowicz’s message: “You have the training, so use it.”

Colvard recommends

that instructors teach diaphragmatic or belly breathing (see “Breathe In, Breathe Out,” on page 36). According to the University of Texas Counseling and Mental Health Center, “Diaphragmatic breathing allows one to take normal breaths while maximizing the amount of oxygen that goes into the bloodstream. It is a way of interrupting the fight-or-flight response and triggering the body’s normal relaxation response.” Says Colvard, “This way, you can make sure students and divers are calm and relaxed before getting into the water.”

Levendorf says that instructors are trained to recognize when a student is about to panic. “We

---

***“Panic is the ultimate dive wrecker — great care must be taken to protect both the diver and the instructor when trying to arrest a headlong flight to the surface.”***

---

recognize the deer-in-the-headlights look mere seconds before the novice diver spits out the regulator and bolts,” he says. “With coaching, this can usually be resolved before they dive in open water.”

But Levendorf says when panic happens in open water, “it’s a far more serious circumstance — the ultimate dive wrecker — and great care must be taken to protect both the diver and the instructor when trying to arrest a headlong flight to the surface.”

### Pro Tips

If you have a history of panic disorder, you shouldn’t dive

## BREATHE IN, BREATHE OUT

Slow, abdominal breathing alone has been shown to prevent panic attacks

1. Start while lying on your back, with your knees bent and your head supported.
2. Place one hand on your chest and one hand on your belly (between navel and ribs); this will let you feel your diaphragm moving. Tighten your stomach muscles.
3. Focus on allowing the belly to rise easily when

inhaling through your nose and fall when exhaling through pursed lips. Hold the chest still with your hand on your chest. The objective is to breathe all the time with the belly (diaphragm) and not the chest. You are aiming for about six breaths per minute.

4. Practice, practice, practice.



until the disorder has been treated and is under good control. “Likewise, claustrophobia or agoraphobia is a contraindication to diving,” says Colvard. “I once helped an instructor with an open water checkout dive student who had struggled in the pool. We dived, but she did not complete the checkout dives. On the surface she told me that she had taken up scuba to deal with her claustrophobia. I told her she was doing it backward.”

But if your stress is not related to a disorder, what can you do when you feel anxiety building, and you’re no longer under the protective wings of your instructor?

“Stay current with your diving,” says Mikutowicz. “If it has been longer than a year, take a refresher before your next big diving adventure to get familiar with being underwater again, as well as how to properly use all of your equipment.”

“When you feel panic arising, concentrate on problem-solving techniques, relax yourself, regain your composure,” says Parkinson. “And if you are able to communicate with someone, do so.”

Karl Shreeves, technical development executive with PADI, adds extra emphasis to the importance of buddy diving.

“The problem with panic is that once it sets in, it usually requires intervention,” says Shreeves. “People rarely calm down and stop panicking on their own. This means a buddy or someone has to intervene, but only if you can do so without getting into trouble yourself, which would only make things worse for you and the diver.”

Instructors also teach this mantra: Stop — Breathe — Think — Act. Stop swimming for a moment. Slow down your breathing and take deep, even breaths from your diaphragm. Remember your training — such as what to do in an out-of-air emergency — and then act.

For more info: Visit [divepsych.com](http://divepsych.com) and download the free training exercises for diaphragmatic breathing, and controlling stress and panic.

## Dive Health

# Ask DAN

How long should I wait to fly after I dive?

BY DIVERS ALERT NETWORK

**I recently received my advanced open-water certification and am planning my first international dive trip. Of course I'll want to dive as much as possible, but I know I have to consider my return flight. What are your recommendations regarding how long I should wait to fly after diving?**

Whether you’re heading to the Great Lakes or the South Pacific, as a diver you need to be cognizant of the effects of air travel on your body, which include an increased risk for decompression sickness (DCS).

### Decompression Stress

The key reason post-dive air travel increases decompression stress is that the pressure in an aircraft cabin is lower than ground-level atmospheric pressure. Imagine you have just completed a dive to 66 feet, where you experienced an underwater pressure of 3.0 atmospheres absolute (ATA). The 1.0 ATA pressure at sea level has already subjected your body to a threefold reduction in pressure. If you then get on a plane that has a cabin altitude of 8,000 feet, with an associated pressure of about 0.76 ATA, you are now experiencing a fourfold reduction in pressure. Furthermore, should your plane suffer an unlikely cabin depressurization, you would be subjected to much greater

## GEAR UP

### IN SAFE HANDS

These accessories could make all the difference if you find yourself in trouble

#### Spyderco Assist Salt

Entanglement — from kelp, fishing line or some other water hazard — presents no problem for the Assist Salt. Nitrogen instead of carbon was used to create a steel blade that holds a sharp edge,

is immune to corrosion and cuts the toughest materials. [spyderco.com](http://spyderco.com)

#### Submersible Systems Spare Air 300

We hope you never have an out-of-air emergency, but this 3-cubic-foot capacity redundant emergency breathing device delivers an estimated 57 breaths of air. [spareair.com](http://spareair.com)

#### SeaLife Sea Dragon Mini 650

Diving in low viz and worried about signaling your buddy? This 650-lumen powerhouse will get his or her attention in an emergency. [sealife-cameras.com](http://sealife-cameras.com)







decompression stress. For this reason, you will want to make sure you have sufficiently off-gassed before you board your flight.

#### Guidelines for Post-Dive Air Travel

DAN and the Undersea

Hyperbaric Medical Society (UHMS) held a workshop in 2002 to review the available data regarding post-dive air travel. The following table outlines their recommendations for the absolute minimum time interval you should wait to

fly after diving.

#### Important Qualifications

As a general rule, it's a good idea to wait longer than the suggested minimum interval. Recent research shows that flying in a commercial aircraft even after a 24-hour surface interval can produce bubbles in a diver's blood; therefore, DAN advises to exercise caution by maintaining more conservative dive profiles during your final day of diving and planning for

a 24-hour surface interval before your flight. You can make the most of it by planning a topside excursion for the final day.

It is also important to remember that any post-dive ascent to a higher altitude — even using ground transportation — increases decompression stress, so follow the same guidelines if you're heading by car, bus or foot from your dive site to the mountains.

For more information, visit [dan.org/Health](http://dan.org/Health).

| Dive Profile                        | Minimum Preflight Surface Interval Suggestion |
|-------------------------------------|-----------------------------------------------|
| Single no-decompression dive        | 12 hours or more                              |
| Multiple dives in a day             | 18 hours or more                              |
| Multiple days of diving             | 18 hours or more                              |
| Dives requiring decompression stops | Substantially longer than 18 hours            |

# Travel Smarter

*With DAN Travel Insurance*

## Coverage That Travels With You

When it comes to travel, a little preparation can save a lot of trouble. DAN's Travel Insurance provides coverage for certain unexpected events, so you can enjoy your dive trip or family vacation. In addition to DAN's trusted Dive Accident Insurance, the per trip and annual plans offer a range of benefits to keep you focused on what matters most. Travel smarter, and explore the benefits.

- Emergency Assistance and Transportation
- Medical and Dental Coverage
- Trip Cancellation
- Trip Interruption
- Rental Car Damage Coverage

**DAN.org/TRAVEL**

Explore [DAN.org/travel](http://DAN.org/travel) for complete coverage. Plans exclude losses caused by, or resulting from, scuba diving below 40 meters or without a dive master. Annual Plan coverage available in the United States except for residents of FL, IN, NY and WA.



Travel insurance plans are administered by Customized Services Administrators, Inc., CA Lic. No. 0821931, located in San Diego, CA, and doing business as CSA Travel Protection and Insurance Services. Plans are available to residents of the U.S. but may not be available in all jurisdictions. Benefits and services are described on a general basis; certain conditions and exclusions apply. Insurance is underwritten by: Generali U.S. Branch, New York, NY; NAIC # 11231. Generali US Branch is admitted or licensed to do business in all states and the District of Columbia. A200\_15\_09





Wrecks, like the *Doc Poulson* off Grand Cayman, can open a world of exploration.





# Wreck Trek

Our guide to what you'll find on 13 unforgettable sunken vessels — and the often poignant, dramatic stories of how they ended up on the sea bottom

**BY BROOKE MORTON**

What is it about a wreck that touches a diver's imagination? It could be the spine-tingling thrill of history coming alive, the excitement of a new experience, the exhilaration of exploring inside, or the fun of watching it transform to a living reef. Whatever the reason, the chance to dive a special wreck compels us to cross oceans and continents. From the Atlantic Ocean to the South Pacific and the Great Lakes to the Caribbean, here is a baker's dozen of ships (and one plane) we love to dive.





# Sweepstakes

## Ontario, Canada

With its deepest point at no more than 20 feet, the 119-foot *Sweepstakes* schooner belonging to Lake Huron's Fathom Five National Marine Park in Tobermory, Ontario, is ideal for new divers — or experienced divers seeking ambient-light-photography opportunities.

"It's not challenging by any stretch of the imagination," says Warren Lo, an underwater photographer who's regularly dived the Lake Huron site since 2003.

Also a scuba instructor, he

finds that students zero in on the cargo holds.

"They're a big attraction because you can see inside a wreck without actually going inside," he says.

Cargo aside, the overall appeal is that *Sweepstakes* remains among the Great Lakes' best-preserved wooden ships, with its prominent bow, windlass and largely intact hull; however, what you see is not 100 percent historical. The park has rebuilt sections in the name

of preserving the wreck as a whole, and divers are no longer permitted to explore its interior.

**Dive Briefing** For Toronto residents, it's roughly a two-and-a-half hour drive to the park, making it popular at summer's height for divers, as well as guests of glass-bottom-boat tours. Because dive trips don't run when glass-bottom boats do, you might want to time your visit in June or after Labor Day. [gswatersports.net](http://gswatersports.net)



Damaged off Cove Island in August 1885, *Sweepstakes* was towed to Big Tub Harbour, but it sank in September before repairs could be made.



The torpedoes that sank the 446-foot *Atlas* in 1948 ripped it in two, creating two sections — and two disparate dive experiences.

This shallower portion also offers more structure at 80 and 90 feet, giving divers longer bottom times. It's collected more growth, namely anemones, sponges and corals, and, in turn, become a macro wonderland — an appeal overlooked thanks to the number of megafauna that more easily fill a lens frame.

"The stern looks more like a shipwreck — like what you expect — with winches, boilers and the engine block," says Belisario. This aft section also attracts more marine life, namely sand tiger and sandbar sharks, plus the occasional bull.



On April 9, 1942, *Atlas* was attacked and struck by two torpedoes fired by a German U-boat. Two crew members lost their lives; survivors were picked up by a U.S. Coast Guard cutter.

"You'll absolutely need nitrox," says Belisario, adding that divers can

also benefit from a surface-marker buoy should they surface away from the boat. If you plan to explore both parts of the wreck or cruise the sand to study the wreckage, bring a wreck reel.

The *Nippo Maru* tells the story of 1944's Operation Hailstone attack better than any other Chuuk Lagoon wreck. In less than two hours, the 354-foot Japanese navy supply ship sank, carrying machine guns, shells, detonators, gas masks, mess kits, shoes and beer bottles. And if the cargo alone isn't enough to humanize the story, the galley and most of the living quarters remain intact.

The best part, says Cliff Horton — treasurer of *Odyssey Adventures*, whose liveaboard vessel *Odyssey* regularly visits — is that “a beginner diver could just as easily have a great dive on this wreck because of stellar visibility as could a seriously qualified tec diver who’s penetrating to see the engine room.”

*Nippo Maru* was set ablaze and sunk by a trio of 500-pound bombs from TBF Avengers during the massive naval air and surface attack on Feb. 16-17, 1944.

**Dive Briefing** The wreck's signature photo op is the wheelhouse. Says Horton, "If you're a photographer, note that the wheelhouse is good for positioning a diver on the opposite side looking in."

## Grenada

Perhaps no other Caribbean wreck offers greater payoffs with as little commitment. The 600-foot passenger ship is 10 minutes by boat from the island's southwestern tip, and the shallowest sections start at 100 feet. Visibility off Grenada is usually about 70 feet, making it likely that the magnitude will wow you. Follow guide Peter Seupel to his choice viewing spot, nestled near the anchor at 170 feet, peering up at the towering bow. Says the Aquanauts dive center owner, "It feels like being in a European cathedral: the shapes, the light, the quiet feel very much the same." Granted, recreational divers can't reach this spot without an upgrade; PADI's Tec 50 Diver course will land you to 164 feet. The depth and current make this an advanced dive.

On Oct. 22, 1961, *Bianca C* was docked off Grenada when it was rocked by

**Dive Briefing** Time for recreational divers is limited to 20 minutes. Any tec rating increases that — and the likelihood of seeing eagle rays. Says Seupel, “Your chances on a recreational dive are 1-in-3, but spend an hour on the wreck, and you’ll always see a school of eagle rays.”

*aquanautsgrenada.com*

On Oct. 22, 1961, *Bianca C* was docked off Grenada when it was rocked by an engine-room explosion; one crewman died immediately. Islanders rushed to help some 700 passengers and crew to safety; today it rests off Grand Anse Beach.



# Chance Vought F4U Corsair

## Oahu

This World War II-era American fighter bomber crash-landed and quickly sank in 115 feet of water off Oahu's southeast coast in 1948. Now it's among the island's best-known wrecks but rarely attracts a crowd.

"You imagine that historic wrecks are either protected so you can't dive them at all, like the Pearl Harbor wreck, or you have those with lines of boats and you wait your turn," says photographer and Hawaii local Doug Perrine.

"At the Corsair, nobody was there — we had it to ourselves," he says.

Given the plane's dramatic end, it's impressively intact: The tail fins, propeller, rudder pedals, stick and seat remain.

For photographers, the white sand serves as an excellent contrast for the fuselage; for nonshooters, it's an interest point for the seemingly endless rows of garden eels craning their necks like periscopes.

**Dive Briefing** After you inspect the plane, head to the channel where you might encounter sharks, mantas and other passing pelagics. Be prepared: Heavy current can affect this site. [diveoahu.com](http://diveoahu.com)



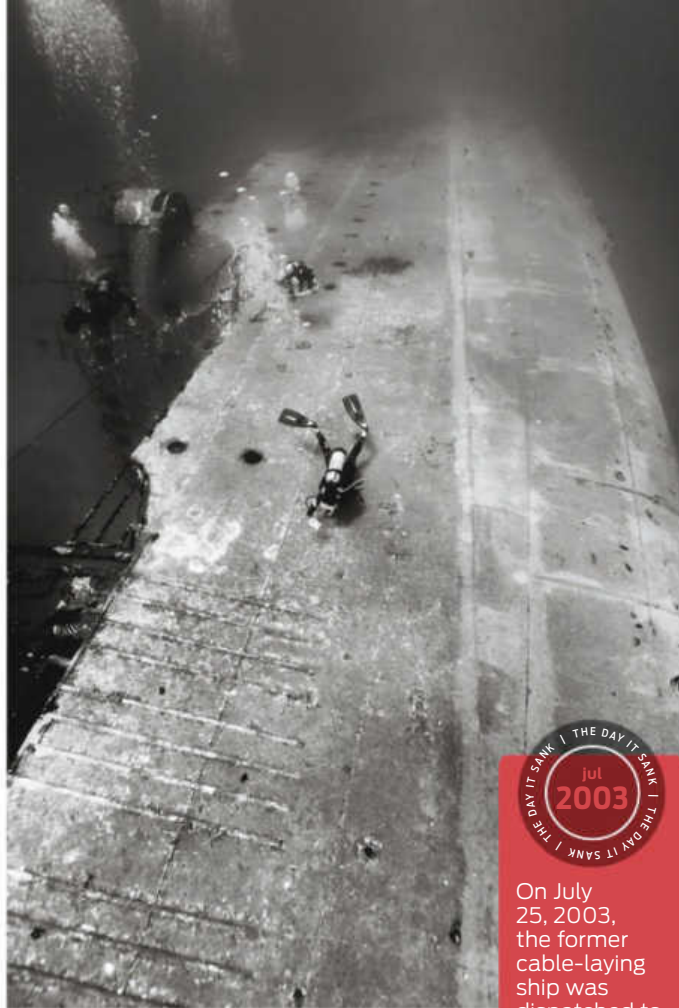


GREG PIPER



On a routine mission from Pearl Harbor in 1948, the pilot had to ditch the plane when it ran out of fuel; the pilot was rescued.





## Charles L. Brown

### Sint Eustatius

In 2002, the Dutch Caribbean island of Statia purchased the 327-foot *Charles L. Brown* for a symbolic \$1 from AT&T, and locals immediately got to work prepping the vessel for its eventual sinking. "It's a good example of how a small island can achieve big things," says Mike Harterink of Scubaqua Dive Center.

Stellar viz makes the approach to the wreck spectacular. "It's swarmed by hundreds of horse-eye jacks, turtles and sharks, and a huge resident barracuda named Charlie," says Harterink. "After diving it, you'll understand why every diver visiting Statia wants to dive here."

While it's a relatively young artificial reef, Harterink says, "like a good bottle of wine, it's getting better and better every day."

**Dive Briefing** Less famous but not less spectacular is *Charles L. Brown*'s "little brother," the 170-foot *Chien Tong*. Standing upright in 70 feet of water in protected Oranjestad Bay, "this wreck is a magnet for juvenile turtles," says Harterink. "Make a night dive when the young turtles' moms and dads join in for a good night's rest." [scubaqua.com](http://scubaqua.com)

### USS Oriskany, Pensacola, Florida

Everyone knows the Mighty O as the more accessible of the world's two sunken aircraft carriers — the other is the *Saratoga* off Bikini Atoll. But what everyone might not know is that unlike most warm-water wrecks that are deteriorating daily, this 888-foot artificial reef is gaining bulk thanks to honorific visitors leaving behind tributes to passed loved ones, including a fireman's helmet and ship's bell. But locating those finds might better suit subsequent dives. Start first with the flight deck at 140 feet; with visibility averaging 60 feet, you can tiptoe to recreational limits and still enjoy the vantage. Then penetrate the flight-control room at 80 feet to mix with the resident blennies and beaugregory fish.

#### The Day It Sank

Purpose-sunk on May 17, 2006, *Oriskany* operated primarily in the Pacific into the 1970s, earning two battle stars for service in the Korean War, and five for service in the Vietnam War.



**Dive Briefing** "The cool stuff is at 110 feet and deeper," says Kerry Freeland, co-owner of Gulf Coast Dive Pros in Pensacola. Because of this, he recommends that divers request a tank larger than the default 80-cubic-foot aluminum. Say the word and Freeland will set you up with a 95, 100

or 120. Says Freeland, "These give you as much as 50 percent more gas, enabling you to take full advantage of your nitrox mixture — you get the full bottom time allowed without being limited by air consumption." [florida-divepros.com](http://florida-divepros.com), [downunderdivepro.com](http://downunderdivepro.com)

### Doc Poulson Grand Cayman

With multiple moorings, the USS *Kittiwake* was rigged to accommodate several dive boats; the *Doc Poulson*, just one.

"It's a more exclusive experience," says Nicola Williams, PADI MSDT for Reef Divers scuba center in West Bay, the island's northwest tip.

On the bottom for more than three decades, the former cable-laying ship has remained intact. Because of this, the ship has had decades to collect soft- and hard-coral growth.

*Doc Poulson* allows for basic penetration: Drop inside the hull, flooded with sunlight, before swimming through the wheelhouse.

But at 100 feet long, the ship is small. For most visitors, it becomes the first half of a dive, with the nearby wall providing the second.

#### The Day It Sank

Purpose-sunk in 1981, *Doc Poulson* is named for the doctor who helped establish the first hyperbaric chamber on Grand Cayman.

#### Dive Briefing

Thanks to the shallow depth, average visibility of 100 feet or more, and the absence of other dive boats, the wreck is ideal for video newbies. [cobaltcoast.com](http://cobaltcoast.com)





## **IRO** **Palau**

Palau's underwater World War II gallery isn't so much about one wreck as the entire collection, but if one ship were to be called out, that ship is the *Iro*.

"It's the one everybody has to do," says Marc Bauman, director of sales for Sam's Tours Palau, a dive center that regularly takes guests to the 470-foot Japanese fleet oiler and supply ship — unforgettable thanks to a silhouette defined by two kingposts, rectangular like bridge supports.

"It's impressively preserved, fully encrusted in coral, and sits in a good area," says Bauman, referring to its location 10 minutes by boat from Palau's capital city, Koror, and 120 feet from the surface.

Tec divers target the wreck for its vast penetration routes; recreational divers will be drawn to the forward deck, excellent for spotting cuttlefish.

**Dive Briefing** For Paul Collins, a dive instructor for Sam's Tours, the best perch is at 20 feet among the top of the kingpost forward of the engine room. "You'll find the largest anemone garden in Palau full of tomato anemonefish — it's heaven!" [samstours.com](http://samstours.com)

On March 30-31, 1944, carrier-based American planes dropped explosives on the remnants of the Japanese fleet during Operation Desecrate One. Over two days, at least 60 ships were destroyed and sank to the bottom, including *Iro*.







## SMS Coln Orkney Islands, Scotland

Mention Scapa Flow, and talk turns to *Coln*, the 510-foot German cruiser well-deserving of the hype. Following WWI's end in 1919, seven warships, including three battleships, two additional cruisers and a minelayer; of them, *Coln* remains the most intact.

"Turn your head, and you can imagine it sailing along," says Mark Evans, editor of *Sport Diver* magazine in the U.K.

Even a torpedo tube survived: It fell from the deck onto the sand where a veil of silt has settled overtop, but the loading hatch is clearly identifiable.

As are the deck guns, stern anchor and armored control tower.

"It looks like something you'd expect to see on top of a tank," says Evans.

## The Day It Sank

Sunk in late 1918, the German High Seas Fleet, including *Coln*, arrived in Scapa Flow; on June 21, 1919, fearing the British intended to seize the fleet, Rear Adm. Ludwig von Reuter gave the order to scuttle every ship.

**Dive Briefing** Given the 118-foot depth, you'll want at least advanced open

water and nitrox certifications, plus a drysuit. Says Evans, "It's way too cold at depth to do in a semidry."

[scapascuba.co.uk](http://scapascuba.co.uk)

## Mary Celeste Bermuda

Devotees of the Civil War blockade runner welcome storms and turbulent seas that churn up sand under the 1864-sunk wreck — and treasure. Recently, that's included a bottle of perfume, whose scent was re-created by on-island perfumery Lili Bermuda, and a bottle of wine opened at a Charleston, South Carolina, food festival in March 2015. But the bottle might have been more valuable than its contents; master sommeliers described notes of crab water, sulfur and vinegar.

Not all divers who search will

discover physical evidence of the ship's complex history, but they'll learn its fate in the briefing, starting with the fact that this 225-foot paddle-wheel ship has a twin, the *Montana*, sunk on the north shore.

Today, the hull's center is broken up, but the bow, stern, boilers and paddle wheel remain intact.

## The Day It Sank

One of the swiftest of its class, *Mary Celeste* made at least five successful blockade-running trips delivering goods to the U.S.; on Sept. 13, 1864, it ran out of luck when an overconfident pilot steered it onto a reef.

**Dive Briefing** A recent site excavation revealed a parrotfish-aggregation site about 150 feet to the west. Spring is the best time for viewing the three species that rely on the site to breed. [fantasea.bm](http://fantasea.bm)

# SS NUMIDIA

## Big Brother Island, Red Sea

The remote location — an overnight motor from Port Ghalib, Egypt — not only deters day-boat crowds, but it also promises stellar visibility.

"That's the major difference between this wreck and those close to Sharm el-Sheikh and Hurghada, where you get a lot of particulate in the water off the desert," says Wayne Hasson, president of the Aggressor Fleet. *Red Sea Aggressor's* northern itinerary includes the Brothers islands and *Numidia*. "Here, the waters are crystal-clear because you're so far offshore — you're in the middle of the Red Sea," he says.

The wreck itself, torn in half, lies on the sloping wall of Big Brother Island's northern point.

"*Numidia* is broken up enough that you can see the big steam-engine cylinders easily," says Hasson, adding that the ship allows for easy penetration.

**Dive Briefing** Allow time on the top deck to connect with the local population of anthias. "The wreck is covered in clouds of gold anthias," says Hasson. They'll drop close to the wreck as you approach, fearing you're a predator. But there's a way to get face time. "Stay still, and they'll come back to envelope you." [aggressor.com](http://aggressor.com)

The pilot might have been asleep at the wheel when *Numidia* slammed into a shallow reef, eventually broke in two, and sank in 1901.







# SS *Benwood*

## Key Largo, Florida

This former Norwegian merchant freighter should be every beginning wreck diver's starting point. Sitting in 25 to 45 feet, the structure is largely broken open, exposing its ribs and offering easy access for divers.

Most intact is the bow, now thick with tube sponges, sea fans and other growth, adding pops of color — and cover for the resident 5-foot green moray. Add schools of French

grunts to the equation, and it's understandable why Jeff Cleary, an owner of the Key Largo-based scuba center Sea Dwellers, says, "It's a condo for marine life."

If the dive proves easy following a day trip, Cleary recommends a night visit, which his shop offers Wednesdays and Saturdays. In addition to scores of sleeping parrotfish, a loggerhead turtle with a 4-foot-diameter shell typically makes a visit.

**Dive Briefing** Bring a dive light to unveil what lives in the nooks and crannies of the reef, as well as the drop-off nicknamed Elevator Shaft, found by following a 170-degree compass heading from the bow. This pocket drops from 30 to 75 feet, and next to the encrusted bow, offers the greatest coral garden at the site.

[oceandivers.com](http://oceandivers.com), [rainbowreef.us](http://rainbowreef.us), [seadwellers.com](http://seadwellers.com)



On April 9, 1942, *Benwood* and *Robert C. Tuttle* were traveling "blackened out" to avoid detection by German U-boats when they collided; *Benwood* sank in the early-morning hours of April 10.



# AT RAI



IT'S EASY TO SUCCUMB TO THE MANY CHARMS OF MAUI,  
HAWAII'S SECOND-LARGEST ISLAND  
BY REBECCA STRAUSS



# NBOW'S END



FROM LEFT: DOUG PERRINE;  
DAVID FLEETHAM  
OPPOSITE: DAVID FLEETHAM





Goldring surgeonfish clean the shells of green sea turtles. Opposite: divers at the entrance of First Cathedral.

At dawn on my first morning at Ka'anapali Beach, I push open the curtains and step out onto my oceanfront balcony, where Maui's lure becomes immediately apparent — there's a double rainbow over the ocean, ending seemingly right in front of my hotel. After a quick breakfast, I'm ready to explore what lies at that rainbow's end with Dive Maui.

I had arrived the evening before and saw little of the "Valley Isle" or the lovely planned community where I'm staying, Aston Ka'anapali Shores, about 5 miles north of the old whaling port of Lahaina. Travel never seems to go according to plan, and my arrival on Maui is no different. A 1 p.m. flight turned into a 9 p.m. one, so I navigated the hilly roads to the hotel, on the island's northwest coast, in the dark.

Friends who knew I was visiting spoke reverentially about the island and the spell it cast upon them — the underwater landscape I'd come to explore, the lush, rolling hills, the soaring Haleakalā volcano and the winding Road to Hana, twisting its way through a rainforest on the northeast coast. I can't wait to discover this magical island for myself.

## GOING TO CHURCH

I show up at the cozy Front Street shop in Lahaina at 7:45 a.m. on the dot and find that I'm the last one there. The rest of the day's group, hailing from all points mainland, as well as our captain, Steve Butler, and the shop owner (and guide) Capt. Steve Juarez head out to the coast of Lanai for the day's dives onboard



**MAUI IS WHAT HAPPENS WHEN YOU'RE BUSY MAKING OTHER PLANS.**



### DIVERS GUIDE TO MAUI

**What to wear:**  
3 mm wetsuit

**Average viz:**  
100 feet

**When to go:**  
Year-round, although hump-back whale season falls from January through March. Diving and snorkeling with the whales is not permitted, although divers will often hear their haunting songs underwater.

**For more info,**  
go to [sportdiver.com/maui](http://sportdiver.com/maui).

*Hoku*, a 37-foot rigid-hull inflatable. Much of Maui's best diving is, in fact, off the south shore of Lanai — a former pineapple plantation about 8 miles due west of Maui — including the famed sites First Cathedral and Second Cathedral. It's about a 40-minute boat ride before we near the largely undeveloped coast. The highlight is our second dive, when we splash in at Second Cathedral, a huge underwater cavern with lots of swim-throughs and archways.

"I always do it as a second dive," says Juarez. "When the sun's directly overhead, there's more light rays inside. It looks like a spotlight shining down in the cavern."

During the briefing, we learn that Second Cathedral has

huge schools of blue-striped snapper. "The local name is *taape*," says Juarez. "As you swim into the schools, they spread out like a giant yellow ribbon several hundred yards long over the top of the reef — it's beautiful for photos and video."

As we drop down, as forecasted, curtains of blue-striped snapper part, plus Moorish idols and raccoon butterflyfish abound. As we enter the dark cavern for which the site is named, light pierces the holes in the ceiling and falls in beams to the ocean floor. A 6-foot black coral hangs from the cavern's ceiling like a chandelier. These rare corals can be more than a thousand years old, and are usually found in deeper water. The filter-feeding coral "thrives here because the cavern is dark and there's just the right amount of surge bringing nutrients in," says Juarez.

On our surface interval, I chat a bit with Butler, who originally came to Maui from northern California. "I came out to visit my little brother for a few weeks," he says. "That was eight years ago."

It's a story I'll hear again and again during my stay: Maui is what happens when you're busy making other plans. That night, my waiter at the lively

Hula Grill tells me the legend of the demigod Maui, who used his magical fishing lure to pull the islands of the Hawaiian chain from the bottom of the ocean. As the crowd chats happily, the

*“I CAME OUT 17 YEARS AGO FOR TWO WEEKS’ VACATION,*



A frogfish  
at Second  
Cathedral.  
Opposite: Divers  
encounter a  
day octopus.

breeze rustles the palm trees, the sun sets over the water and the band covers Elton John, I can feel the hook sinking in as well.

### THE WAY TO NEVER-NEVER LAND

The next morning brings another early wake-up call. Today's sites include two more of Maui's best: First Cathedral and Monolith. We visit Monolith — one of Juarez's favorite sites — first. It's a pinnacle that begins about 45 feet from the surface and drops away to around 110 below. There's another pinnacle at the site too — “We call it Never-Never Land because we never, never bring tourists out here,” jokes Juarez. The site is deep and subject to strong currents, but he's judged today's divers capable, and we drop down to about 80 feet on Monolith. He wasn't kidding about the current, and after 10 minutes on the first structure, where we spot long-nose hawkfish nestled next to gorgonian fans, we tuck in and power across the sand to Never-Never Land, where we check out a black coral at about 100 feet and where another long-nose hawkfish awaits. Juarez

had briefed us about the endemic longfin anthias that have made Never-Never Land home. “These are beautiful fish, and you'll find a male with a harem of nine or 10 females, and a few feet later, there will be another male, also with a harem. If they get too close, they'll fight; they're protective of their territories.”

Sure enough, the colorful (bright orange, yellow, blue, magenta, red and purple!) anthias are where Juarez told us to find them, each male protecting his turf and harem. The viz is nearly bottle-glass-clear as we turn around to head back to Monolith; ahead of us, two eagle rays wing across the sand.

For the same reason Juarez dives Second Cathedral later in the morning, we're diving First Cathedral as our second dive. And like its sister site, First Cathedral is aptly named. “Some of us even got married in there,” Juarez says. “Part of the roof collapsed, and the big lava rock that fell to the floor of the cavern is what we call the Altar.” On Jan. 5, 2015, Steve exchanged wedding vows with his wife, Robin, here.

We don't crash any weddings today inside the underwater



***FAXED IN MY RESIGNATION, AND NEVER WENT BACK.***



DAVID FLEETHAM. OPPOSITE: GREG PIPER

lava tube, but we do spot countless schooling raccoon butterflyfish, angelfish and nudibranchs. Juarez signals to the group, as if he's flicking a cigarette lighter — he's spotted a flame angelfish.

"Flame angels were hunted by the fish collectors for the mainland aquarium trade and are almost extinct here," Juarez tells me later. "Maui County regulated the fish collectors out of business, and now we are starting to see more flame angels on our dive sites. They are very shy and hard to photograph because they hide in the corals."

Another lovely aspect to this dive is a lava tube called Shotgun or Torpedo Tube. When you time the surge right, the group can shotgun, one at a time, through a hole in the main cavern's back wall.

This site's resemblance to a cathedral doesn't end with its architectural similarity. The abundance of marine life is like the choir belting out the "Hallelujah" chorus: turtles, tons of fish, including endemic bandit angelfish, along the outside walls of the cavern. Nudibranchs shelter in the bright pink



## **DON'T-MISS DIVES**

### **Monolith**

This large, rectangular lava pinnacle starts in about 45 feet of water. Often subject to strong currents, the site is appropriate only for experienced divers but offers a rare chance to spot black coral above 150 feet.

### **Molokini Crater**

Maui's most popular dive site offers a shallow, hard-coral garden in the protected bay, as well as adrenaline-pumping drift dives along the back wall. Divers can spot 38 kinds of coral,

as well as butterflyfish, Moorish idols, turtles and more.

### **Second Cathedral**

The larger of the two cathedrals, this 100-foot-long lava tube offers entrances and exits everywhere. Check out the ceiling of the main chamber for rare black coral — called the chandelier — as well as wrasse, butterflyfish and damselfish.

***Dive Maui/Hawaiian Rafting Adventures***  
[goscubadivemaui.com](http://goscubadivemaui.com)

***Maui Dreams Dive Co.***  
[mauidreamsdiveco.com](http://mauidreamsdiveco.com)



**THE MAGIC OF MAUI COULDN'T BE MORE SEDUCTIVE. IT'S AS IF THE**

and orange cup corals that cover the roof of one of the swim-through openings. Everywhere you look, there's an explosion of color, activity and the glorious play of sunbeams on dark lava walls.

### PARADISE LOST, AGAIN

The next morning it's time to pull up stakes and head south to Wailea, a resort area on Maui's west coast, but not before a slight detour. It's hard to get lost on an island, but I somehow manage it. A late-afternoon arrival and a GPS address that sends me to a closed office means I'm meandering through developments, searching for the right spot. I crest a hill — on the right track now, I think — as the sun is setting over the ocean behind me. There are worse spots to be lost, and any irritation I might have felt melts away with the realization that I would have missed (another) glorious sunset had I found my way sooner.

I pull up a bar stool that evening at Monkeypod Kitchen, a

The magic of Maui can be felt atop the ocean on a paddleboard.

gastropub with 36 craft brews on tap and a rocking live band. I order the burnt Maui pineapple and cashew salad, all ingredients sourced locally, and strike up a conversation with the bartender, who — no surprise — came here on vacation and never left.

After a restful night in my Maui Ekahi Village condo (found it!), I head to Maalaea Harbor to board *Maui Diamond II* with Maui Dreams Dive Co. I've already knocked off First and Second cathedrals; now it's time to dive famed Molokini Crater. I board the boat around 6:30 in the morning with another eager group of divers.

It takes about 45 minutes to get out to Molokini, which is already crowded with boats early in the morning. The crescent-shaped, partially submerged volcanic crater is all that remains of one of seven prehistoric volcanoes, and it's now a marine and bird sanctuary. Experienced divers can drift along the back wall of Molokini, spotting everything from whitetip reef sharks to



### ◀ A Different View

Sometimes when you've spent all day under the sea, the next best thing is standing on top of it. Do just that with a stand-up paddleboard tour on the south side of the island. Go out on a clear day, and you'll get views of turtles and fish in the water to complement the beautiful backdrop of Maui. Don't have the best balance? Lessons are available too. [hawaiianpaddle.com](http://hawaiianpaddle.com)

## DEMIGOD HIMSELF HAS REELED ME IN.

passing mantas, but today's agenda calls for a long, leisurely dive in Molokini's protected bay. The shallow, hard-coral garden, with average dive depths of only about 50 feet, is home to more than 250 species of fish. Our group drops into crystal-clear waters and levels out at about 40 feet. Visibility over the garden is amazing — at least 100 feet — and I see black triggerfish, a day octopus, moray eels, and schools of yellow tang and threadfin butterflyfish.

Back on the boat for the surface interval and chatting with Teri White, the dive-shop manager, a feeling of déjà vu comes over me. "I came out 17 years ago for two weeks' vacation, faxed in my resignation, and never went back," she says. We're sitting on the boat's upper deck, motoring over to Wailea Point for our second dive of the day, and it's not hard to see why she never even returned to the mainland for her clothes. The hills behind Kihei glow with a lush green in the midmorning sun; there are a few snorkelers and stand-up paddleboarders in the water; and

someone thinks they just saw dolphins. Even the Maui mantas stick around the island, White tells me. None of the identified 300 animals has ever been spotted on Kona or vice versa, most likely owing to the 30-mile-wide, 6,100-foot-deep channel separating the islands.

The next day, back on board, we stick closer to shore, diving the Triple Anchors and Helldiver plane wreck. Both are shallow sites with lots of macro, and we spend most of the first dive following the three anchor chains from the cement block in the middle out to the anchors themselves, finding frogfish, nudis and plentiful juvenile fish along the way. At Helldiver, an intact World War II plane in about 50 feet of water, we investigate under the wings, looking for Hawaiian lionfish, leaf scorpionfish and more nudis.

I've got to spend my last full day in Maui on dry land, leaving just enough time to experience the island's most famed top-side trip: the Road to Hana. The journey begins just west of the funky hippie-meets-hipster town of Pa'ia, where Main Street pedestrians are as likely to be dreadlocked surfers as sunburned tourists. Although I was hoping for sun, the weather gods are not cooperating today, and a light rain falls for most of the 64-mile journey. Because I begin my drive in the early afternoon, I'm spending the night in Hana, a tiny community at the end of the road; driving back in the dark is not recommended. Traffic moves at a leisurely pace, which is fine considering that there are 46 one-way bridges — 59 bridges in all — spanning gushing waterfalls, and countless switchbacks on the narrow road. I stop along the way at fruit stands, the black-sand beach at Wai'anapanapa State Park on Pa'iloa Bay, and finally for some

of the best coconut-milk ice cream I've ever had, before pulling into my hotel, Travaasa Hana. I've left myself enough time to enjoy one last — locally sourced, of course — dinner at the hotel's gourmet restaurant, the Preserve Kitchen. The open-air restaurant overlooks Hana Bay, and a gentle breeze lulls me back to my room late in the evening.

My last day on Maui begins as I turn around to traverse the Hana Highway back to the airport in Kahului. For someone whose life revolves around rigid schedules and to-do lists, this island has offered the perfect antidote, a trip full of surprises. From my unexpected evening arrival, to the early-morning double rainbow, dramatic lava structures underwater and a twisting journey to Hana, the magic of Maui couldn't be more seductive. It's as if the demigod himself has reeled me in. Let Maui cast its spell, but be careful — you might never return home.

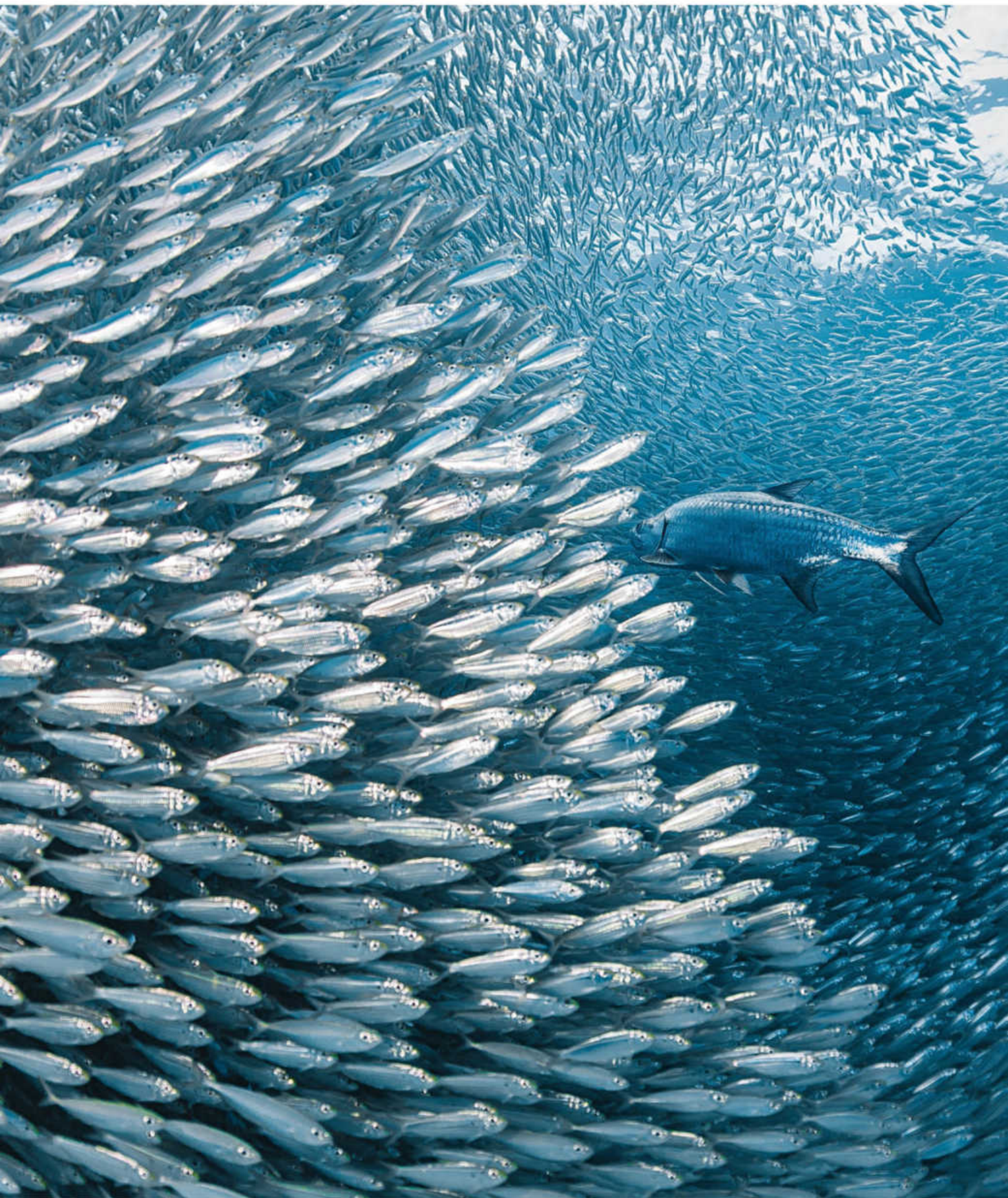
*Special thanks to Aston Ka'anapali Shores, Destination Residences Hawaii-Maui Ekahi Village, Travaasa Hana, and the Maui Convention and Visitors Bureau.*



### STUFF OF LEGEND

Maui is a hero demigod who holds a special place in Polynesian mythology. Besides bearing responsibility for pulling the Hawaiian islands out of the ocean, the trickster lassoed the sun to lengthen the days of summer, and lifted the sky to save man in lore. The Disney film *Moana*, which is set for a November release, includes the character Maui, voiced by Dwayne "The Rock" Johnson.









# ONE FISH, TWO FISH...

*Amid the beauty and diversity of Bonaire's waters, counting fish is a meaningful — and fun — endeavor*

**BY MELISSA GASKILL**

---

Our group spreads out along a reef about 40 feet deep just off the beach in Bonaire, clutching slates and peering at the clouds of colorful fish around us. While we might look like a bunch of fashion critics, we're something else entirely: the underwater version of citizen scientists. Since 1993, the Reef Environmental Education Foundation has compiled surveys from volunteer divers and snorkelers to create the world's largest database on marine species. Volunteers in the Western Atlantic and Caribbean alone have submitted more than 138,467 surveys identifying a total of 812 species.

JENNIFER PENNER

## FISH-ID TIPS: WHAT'S IN A NAME?

Members of the same reef-fish families can look a lot alike. Even if you're not participating in a fish-ID survey, it's nice to be able to tell some close cousins apart.



**Damselfish** can be one of the most difficult families to ID, says REEF trips coordinator Amy Lee. Dusky and longfin damselfish are both a drab brown, but the longfin has — no surprise — long fins extending past where the body and tail join.



**Parrotfish** have noticeable scales and beaked-shaped mouths. Striped and princess parrotfish look similar, but check their tails: Princess parrotfish have a distinct pink upper and lower margin on the tail. "Like a princess skirt," Lee says.



**Gray angelfish** have uniformly light gray bodies, while French can be dark gray or black. To tell these apart, look for yellow tips on the French's scales — like french fries. The gray also has a squared-off tail, while the French tail is rounded.



**Butterflyfish** family members have a false eye spot, or ocellus, near the tail and a vertical bar on the head through the eye. These fish tend to have a flattened and disc-shaped body, and are smaller than dinner-plate-size angelfish.



**Surgeonfish** have a sharp spine on their caudal peduncle — like a scalpel. Tell blue tang and ocean surgeonfish apart by the bright yellow or white of a blue tang's spine. The ocean's spine is blue, blending in with the rest of the body.

Bonaire boasts seven of REEF's top 10 sites for species richness; the 10 species recorded most frequently by volunteers include the bluehead, stoplight parrotfish, bicolor damselfish and yellowtail snapper. My group's top 10 tracked that list pretty closely as we dove 25 sites, completing 253 surveys and reporting 272 species.

Volunteer surveyors use the Roving Diver Technique, meaning we freely roam a dive site the way we would on any dive. The only difference is that we record data and have been well-prepared by our trip leaders with a pre-trip, online fish-identification webinar and regular emails chock-full of fish-ID tips. Every evening while in Bonaire, those leaders hold fish-ID seminars complete with slide shows and plenty of note comparisons.

The organization makes the surveying itself as simple as possible. Christy Semmens — director of science for REEF and one of our leaders — handed out waterproof ID guides and underwater survey forms listing species specific to Bonaire, grouped by type. For example, beneath the Angelfish heading are French, Gray, Queen and Rock Beauty. This way, when we saw a particular species, we only had to check the appropriate name. "Record all the fish you see that you can positively identify, but only what you know," Semmens stressed. The form also lists letters for approximate abundance scores: S, F, M and A, representing Single, Few (two to 10 fish), Many (11-100) and Abundant (more than 100). Again, we just circled the correct one.

Post-dive, volunteers enter their data online or mail surveys to REEF.

It takes a couple of dives before I feel completely comfortable with the extra layer of activity, and I wouldn't recommend surveying for total newbie divers. You need good buoyancy control, for one thing, and an ability to keep track of your location. But otherwise, surveying takes nothing away from a dive. As noted, we swam wherever we wanted, and if something caught my attention, I could suspend counting for a bit — or for an entire dive, for that matter. Post-dive chatter seemed more lively than usual as we compared notes on what we'd seen,

**SURVEYING ISN'T JUST AN EXERCISE IN IMPROVING YOUR FISH-IDENTIFICATION SKILLS EITHER; IT ALSO ADDS A SENSE OF PURPOSE TO A DIVE.**

discussed harder-to-identify species, and engaged in some friendly one-upmanship. I felt more informed too; rather than just gushing about that school of pretty blue fish, I knew I saw blue chromis. And with the goal of finding as many species as possible, I peered under ledges and into nooks and crannies, spotting small or reclusive species such as blennies and gobies that I otherwise might have missed.

Surveying isn't just an exercise in improving your fish-identification skills either; it also adds a sense of purpose to a dive. Fellow Bonaire surveyor Bob Weathers, a professor in Seattle with years of surveying under his belt, says: "I do them mostly because they're fun, in part because I enjoy learning,

French angelfish are a common, and lovely, sight to survey among the reefs of Bonaire.







FROM TOP: ALLISON VITSKY/SALMON; DIRK-JAN MATTAAR/ALAMY; OPPOSITE, LEFT TO RIGHT: TIM SMITH/WATER/ALAMY; IMAGEBROKER/ALAMY; RF CORBIS/VALUE/ALAMY; IMAGEBROKER/ALAMY; DANITA DELMONT/ALAMY

but also because I love making a contribution to knowledge and other good causes. Surveying gives more purpose and focus to my diving. As REEF says, it's 'diving that counts.'"

Government agencies, conservation organizations and universities have used REEF data. "No real useful data on species abundance and distribution existed before these surveys," says Semmens.

Published research that has used REEF survey data covers topics such as harvest, effectiveness of protected areas, spawning aggregations, controlling invasives, biodiversity and population trends.

Several studies have evaluated these citizen surveys themselves. One concluded that REEF's survey methods "returned results consistent with techniques favored by peer-reviewed science." As part of a growing phenomenon of citizen-science programs, REEF's Volunteer Survey Project makes for dives that are fun and meaningful. It doesn't get much better than that.

## Fish Behavior: Housekeepers and Hunters

→ Some types of fish can be identified by distinctive behaviors. For example, many juvenile wrasses, especially blue-head wrasses, act as cleaner fish. Juvenile blueheads actually have a yellow body, but a similarly yellow-colored yellow-head juvenile has a bright blue line down the center of its body.

→ Squirrelfish are more active at

night, hence their large eyes and red color.



→ Some species hang out in distinctive locations. You'll find the shy purple and gold peppermint basslet in deep recesses in the reef, while blue and brown

chromis stay up in the water column rather than swim on the reef. Blue and brown chromis also tend to school.

→ Spanish hogfish and fairy basslets both have purple and yellow coloring. However, juvenile hogfish are cleaner fish, while you'll often find fairy basslets upside down beneath reef overhangs, darting out to snag bits of detritus.



ISLANDS' 27TH ANNUAL

# Photo Contest

+  
ENTER BEFORE  
**APRIL 15**  
ISLANDS.COM/  
FACEBOOK  
+



**TAKE YOUR BEST SHOT. WIN YOUR DREAM TRIP.**

**GO TO: ISLANDS.COM/FACEBOOK**

**1 NANUKU AUBERGE  
RESORT FIJI**

Grand Prize: Win a four-night stay for two at Fiji's Nanuku Auberge Resort. Stay in a in a luxury Beachfront Spa Suite or Villa, including a three-course menu daily, free Wi-Fi, a golf buggy and select cultural activities.

**2 ASTON KAAPALI  
SHORES**

Second prize: Say aloha to a five-night stay in a one-bedroom suite at Aston Kaanapali Shores, a beachfront property on Maui's famed Kaanapali coast. We'll even throw in a \$100 onsite dining credit.

**3 ST. JAMES'S CLUB  
ANTIGUA**

Third Prize: Escape to the Caribbean for a four-night all-inclusive stay at The St. James's Club Antigua, including all meals and beverages, non-motorized watersports, tennis, nightly entertainment, tax and service charges.

**AM MAINE MEDIA  
WORKSHOPS**

Artistic Merit: Win tuition for one week to the Maine Media Workshops in Rockport, Maine, where you can polish your skills. Choose from classes like landscapes, photojournalism, night photography and more.

PREMIER PARTNERS







GULF OF  
CALIFORNIA /  
P62  
BEST CRUISE-  
SHIP PORTS / P64  
ROATAN / P70

# Dive Travel



Whether you're a world traveler or stay-at-home dreamer, these trips are sure to entice

## Love Story

As the sun sets on the Wakatobi Marine National Park, shy, vibrantly colored mandarinfish have one thing on their minds: reproduction. The mating ritual of the small — about 2 inches long — but stunning *Synchiropus splendidus* is short-lived, and you'll need perfect timing to get the shot. Belly to belly, the male and female rise like hummingbirds about 3 feet above the reef, and release up to 200 eggs into the water before quickly swimming away. Have your cameras ready to snap the spectacle — mandarinfish are a beautiful sight if you don't scare them off.

— Andy Zunz

**When to go:**  
Year-round

**Where to go:**  
Wakatobi Dive Resort  
[wakatobi.com](http://wakatobi.com)



BRANDON COLE

### BRING THIS

**Easy on the Eyes** Use a red light like Light & Motion's Sola Photo 1200 (which can switch between red and normal white light) for shooting mandarinfish; red light is invisible to them. Another option: Attach Backscatter's Inon Red Filter LE to your focus light or torch. [lightandmotion.com](http://lightandmotion.com); [backscatter.com](http://backscatter.com)



# The Aquarium

Giant-stride off *Rocio del Mar* into a virtual fish soup in the northern Sea of Cortez

STORY AND PHOTOS BY CHRISTIAN VIZL

**W**here can you find the world's largest whale and a tiny nudibranch in one week of diving? The Gulf of California, also known as the Sea of Cortez, hosts an incredibly abundant and rich marine biodiversity in some 68,000 square miles of water. It offers a unique opportunity to encounter many migratory species like humpback whales, California gray whales, killer whales, manta rays, Humboldt squid, sea turtles and the world's largest animal, the blue whale. There are also resident populations of fin and sperm whales, sea lion colonies, whale sharks that gather in Bahia de los Angeles to feed, more than 900 varieties of fish, and thousands of micro-invertebrates.

One of the best ways to explore the Midriff Islands — a group of more than 50 islands scattered over 80 miles in the north-central gulf — is aboard *Rocio del Mar*, a 110-foot liveaboard that can host up to 20 divers in comfortable air-conditioned cabins. The boat will be your home away from home, with its spacious salon, dining area, dive deck with plenty of space for camera gear, a sun deck and lounge area. Best of all, experienced, local dive guides will take you to the choice spots.

The Midridges — or Islas Grandes — are separated from the Baja California Peninsula by the Canal de Ballenas (Whales Channel). Many of the dives take place off Isla Angel de la Guarda. At sites like Andrea's Eagle, you'll encounter an amazing sargasso forest sheltering blue-spotted jawfish and orange-throat pikeblennies, darting in and out of their burrows.

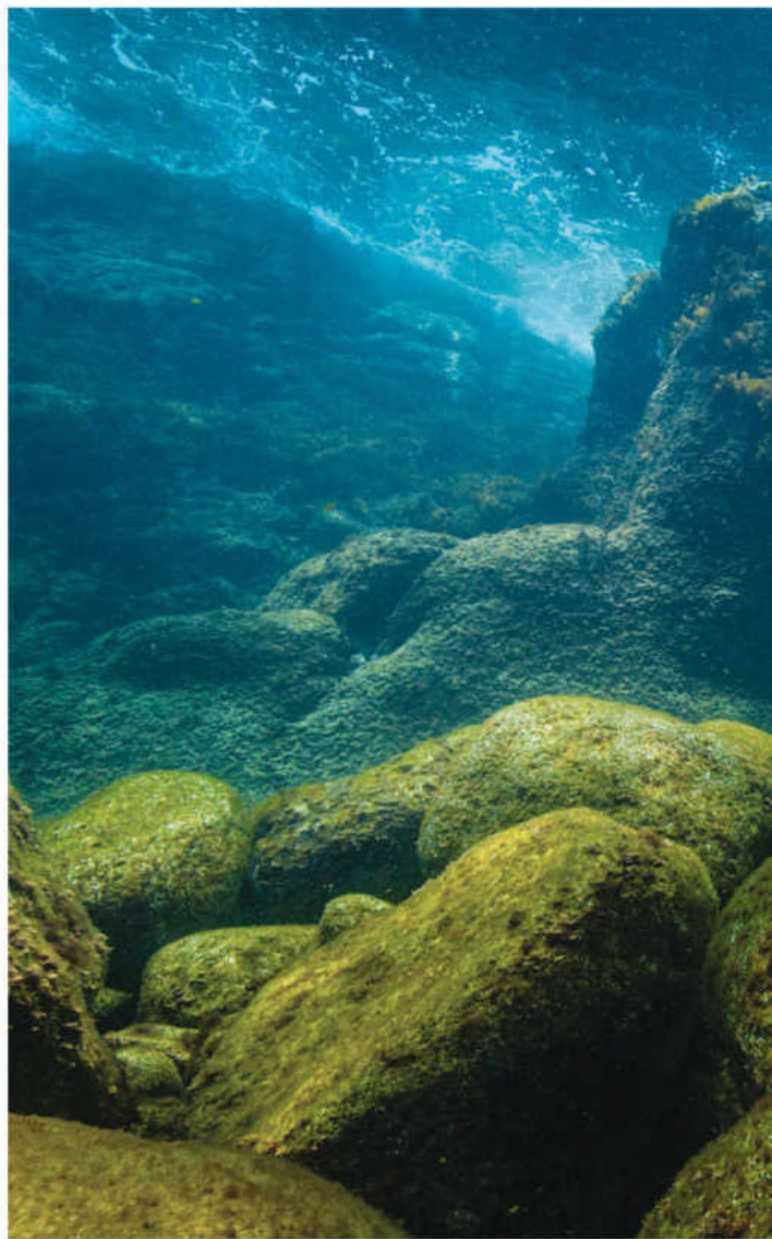
The sites La Vela and La Muela are teeming with macro life, and you'll have your first of many encounters with California sea lions.

One of the highlights of this trip is a snorkel-only experience that takes place at Bahia de los Angeles, a coastal bay on the eastern shore of Baja California, where dozens of whale sharks gather near the surface to feast on the abundance of plankton.

The Sea of Cortez is often called the Aquarium of the World, and after one week of diving there, it'll be easy to see why.

## DIVE IN

Trips run from July to September. Conditions are mostly calm, but at times the sea is rough. Water temps range from 72 to 82 degrees.



BRING THIS



### Scubapro Sport 7 mm Semidry

Pack one extra-thick wetsuit for long snorkel encounters with the whale sharks. [scubapro.com](http://scubapro.com)



### Oceanic OCL

Ready for all your in-water experiences, the OCL offers air/nitrox, gauge, free and watch modes. [oceanicworldwide.com](http://oceanicworldwide.com)



## ITINERARY HIGHLIGHTS

### Day 1

*Rocio del Mar* departs Puerto Peñasco at 6 p.m. You'll wake up the next day with dive sites awaiting at Refugio Bay, off Angel de la Guarda, about 125 miles from Puerto Peñasco.

### Day 3

Humboldt squid encounters — or at least sightings — can happen at night. The squid, along with other nocturnal hunters, are probably attracted to *Rocio del Mar's* powerful lights.

### Day 5

Once the boat has moved to San Pedro Martir, you'll likely get to dive with sea lions; the pups are especially curious and will come close, even tugging on your fins.

### Day 7

On your way back to Puerto Peñasco, snorkel with whale sharks in Bahia de los Angeles. You can have encounters with 6-foot juveniles and huge, 20-foot adults.



Clockwise from left: a California sea lion in the Sea of Cortez; coral serves as cover for a brown-cheek blenny at Punta Rocosa; the sun sets behind *Rocio del Mar* at Isla Mejia.

### THE BOAT

*Rocio del Mar*  
Cabins/Guests: 10/20 max  
Total crew: 11  
Length: 110 feet  
Number of decks: 3  
Contact:  
[rociodelmarliveaboard.com](http://rociodelmarliveaboard.com)



### Cressi Gorgona Bag

This lightweight bag carries a full set of gear and holds even the longest freediving fins. [cressiusa.com](http://cressiusa.com)



### Fourth Element Wetsuit Diver Beach Towel

Towel off after your dives with this quick-drying organic-cotton towel (packaged without plastic). [fourthelement.com](http://fourthelement.com)









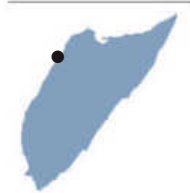
World's Best Dives

# Best Cruise Ship Ports

Take a DIY approach on your shore leave to meet endemic critters, shore-dive house reefs, and double-dip one of the world's largest artificial reefs

BY BROOKE MORTON

**Choose the afternoon trip, and odds are good — 3-in-7 — that you'll visit the C-53 wreck.**



1.

## Cozumel, Mexico

### Wreck Trek

Arrive by ship to the town of San Miguel and then head straight to Scuba Club Cozumel, 1 mile south of the downtown ferry dock. There, you can shore-dive the house reef or, if you arrive by 2:30 p.m., join a one-tank boat tour.

Choose the latter, and odds are good — 3-in-7 — that you'll visit the C-53 wreck (in its former life, the Mexican navy vessel *Felipe Xicotencatl*).

Purpose-sunk in 1999 to 82 feet, it offers safe penetration of the interior corridors, galley, and engine and radio rooms. Those who wish to remain on the perimeter will likely be graced with barracuda and grouper visits, and even eagle ray flybys. [scubaclubcozumel.com](http://scubaclubcozumel.com)

2.

## Roatan, Honduras

### Hide and Seek

The first boat of the day at Tranquileas Eco Lodge on Roatan leaves at 8:30 a.m. It's likely headed to the wreck of the M/V *Aguila*, or a wall dive in the Sandy Bay area.

The structure of the 230-foot former cargo ship — in pieces at 100 feet — is intriguing for its nooks that shelter crabs and spotted moray eels, but it's the dog snapper and tiger grouper divebombing the shallower stretches of the reef that prove most compelling.

If your group heads to the wall, you'll have to work a bit harder to locate the choice find. Toadfish camp out in dens there, visible only for the tiny portions that jut out.

Says Junior Mora, manager of the resort's dive shop, "You have to really comb the reef. They have only a bit of smile and beard showing, but they are always there."

[tranquileas.com](http://tranquileas.com)



**The 230-foot former cargo ship — in pieces at 100 feet — is intriguing for its nooks sheltering crabs and spotted moray eels.**

FROM LEFT: MICHAEL DEFREITAS/CENTRAL AMERICA/ALAMY; TANYA G. BURNETT



***Amphitrite — the mermaid-looking statue in the resort's underwater front lawn — has seen a dozen marriage proposals, as well as innumerable selfies.***



3.

## Grand Cayman

### Mermaid Encounter

It's exactly 1 mile — five minutes by taxi — from where cruise-ship tenders land in George Town to Sunset House. There, the simplest option is shore-diving the house reef.

"We charge \$12 a tank, so compared with what you'd pay on the cruise, you could get three dives in with a buddy during your stay and have lunch together for less than it costs for one excursion," says Keith Sahm, manager of Sunset House.

Drop in, and you'll meet Amphitrite, the mermaid-looking statue in the resort's underwater front lawn. She's seen a dozen marriage proposals, as well as innumerable selfies.

Keep heading offshore to encounter smaller finds, like lettuce sea slugs and other nudibranchs, plus a litany of crabs. [sunsethouse.com](http://sunsethouse.com)







4.

## Key West, Florida

### Double-Take

Step off your cruise ship in Key West, and if you can make Southpoint Divers' departure time at 8 a.m. for the morning boat or 1 p.m. for the afternoon tour, then you'll likely set fin atop the USNS *General Hoyt S. Vandenberg*. By the numbers, the average cruise ship is 1,187 feet, and the Vandy is nearly half that — stretching 524 feet.

It's the size that most stands out in people's minds, so impressive that it warrants a second dive, all possible before it's time to return to the cruise-ship pier.

[southpointdivers.com](http://southpointdivers.com)

***It's the size that most stands out in people's minds.***



***From the Grand Turk Cruise Center, Blue Water Divers is less than a mile away.***



5.

## Grand Turk, Turks and Caicos

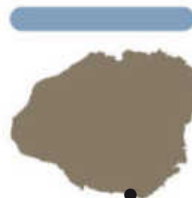
### McDonald's Dive-Through

"We don't make any changes just because someone is visiting by cruise ship," says Vicky Dunsten, activities coordinator for Blue Water Divers. The one difference is arrangements must be made ahead of time to ensure time isn't wasted in the store with gear and paperwork.

From the Grand Turk Cruise Center, Blue Water Divers is less than a mile away; dive-boat departure times depend on a vessel's arrival time.

You'll most likely dive the wall in Columbus Landfall National Marine Park, and if Dunsten has a say, it'll be McDonald's, popular for the archway in the reef.

Says Dunsten, "There's a wonderful contrast of color against a backdrop of very white sand." [facebook.com/bluewaterdiversgrandturk](https://facebook.com/bluewaterdiversgrandturk)



6.

## Kauai, Hawaii

### Cavern Check-In

The most popular dive site on Kauai is Sheraton Caverns — and, yes, it's doable during a cruise-ship drop-in.

You'll miss the morning dive, but the afternoon trip is an option if you arrive by 12:30 p.m. to Seasport Divers, 20 minutes by cab from Nawiliwili Harbor.

The only difference between the morning and afternoon dives is that you'll follow a shallower profile later in the day — no big sacrifice given the site's profile is between 25 and 65 feet.

As for wildlife, says Marvin Otsuji, owner of Seasport Divers, "You name it, we see it there."

The list of the caverns' locals includes zebra, yellow margin and dragon moray eels, plus passing manta rays.

Inside each room, says Otsuji, "there could be a sleeping turtle or whitetip shark, but it's the topography that makes this a really easy and memorable dive."

[seasportdivers.com](http://seasportdivers.com)

***"It's the topography that makes this a really easy and memorable dive."***

**BRING THIS**

**Reef Fish ID Book** Make sure you know exactly *what* you're looking at with a *Marine Life Identification* book. With editions covering the globe from Florida to the Pacific — and digital options — there's something for everyone. [fishid.com](http://fishid.com)







7.

## St. Thomas, U.S. Virgin Islands

### Underwater Paradise

"Armando's Paradise has the greatest amount of sea life," says Doug Sprotte of the site that St. Thomas Diving Club regularly shows cruise-ship passengers. It's five minutes by boat from the scuba center's dock — itself a 10-minute cab ride from the Havensight pier. If divers arrive to the shop by 8:15 a.m., they can be back aboard their vessel no later than 11:30 a.m.

The site itself is a pinnacle between 15 and 40 feet deep, giving ample bottom time to spot octopuses and mingle with lobsters, eels and schooling creole wrasse.

[stthomasdivingclub.com](http://stthomasdivingclub.com)



8.

## St. Maarten

### Perfect Timing

The biggest hurdle to diving St. Maarten when arriving via cruise ship is coordinating the times. Often ship time is one hour behind island time, making it easy to miss the dive boat.

Plan ahead, and you will make the 8:40 a.m. arrival time at St. Maarten Dive Adventures shop in Divi Little Bay.

From there, you'll likely dive the HMS *Proselyte*. The frigate ship lies in 45 feet of water, allowing time to peruse the cannons, ballast bars and anchors. [stmaartendive.com](http://stmaartendive.com)

**You'll walk off the cruise ship's gang plank and immediately onto the dive vessel to start a half- or full-day getaway.**



9.

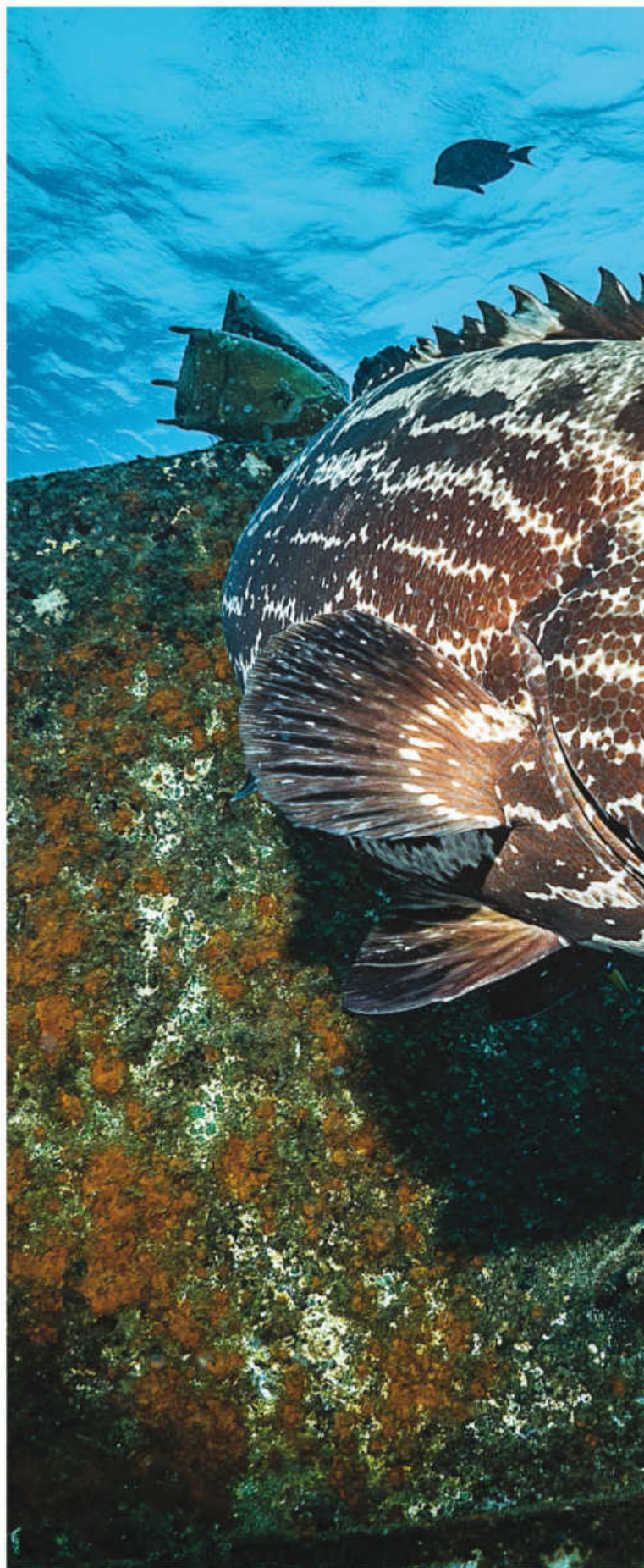
## Tortola, British Virgin Islands

### Suit Your Fancy

"You control the itinerary," says Mike Rowe, course director for Sail Caribbean Divers, of booking a private excursion through his Tortola-based outfit. Whether you're making the reservation for one, two or 24 guests — the fleet of four dive boats, including a 46-foot vessel, caters to groups of all sizes — you'll walk off the cruise ship's gang plank and immediately onto the dive vessel to start a half- or full-day getaway.

Where you'll head is entirely your choice. Sail Caribbean Divers also sends a guide with each private charter, so you get more one-on-one contact with the critters he points out, or get help brushing up on skills if you're rusty.

"Scheduled cruise-ship excursions are held to very strict timelines," says Rowe. "But with private excursions, there's so much flexibility." [sailcaribbeandivers.com](http://sailcaribbeandivers.com)







***You'll kneel  
in the sand  
as these  
scavengers  
— along with  
a resident  
black grouper — snap  
up herring.***

10.

## **Nassau, Bahamas**

### **Feeding Frenzy**

If you want to hang with the big boys of Nassau — Caribbean reef sharks, that is — you have to know when your ship leaves the port of Prince George Wharf. If it's 6 p.m. or later, then you can join Stuart Cove's Dive Bahamas for the afternoon feed, where you'll kneel in the sand as these scavengers — along with a resident black grouper — snap up herring just inches from your face.

If your cruise ship is departing sooner, you have the option of making a morning dive.

Either way, Stuart Cove's van will collect you from the cruise-ship terminal; morning pickups happen at 7:45 a.m., and the afternoon pickup time is at 11:45 a.m.

[stuartcove.com](http://stuartcove.com)



Perfect Ten

# Roatan

This western Caribbean island serves up a sense of adventure from the depths of shipwrecks to the heights of a swashbucklin' zip-line excursion

BY PATRICIA WUEST

## 1.

### Odyssey

Roatan has a number of fun wrecks, including *Prince Albert* and *El Aguila*, but *Odyssey* is the largest. Sitting on the sand bottom in 110 feet of water, the center section has collapsed, but the bow is upright and intact. [blueislanddiversroatan.com](http://blueislanddiversroatan.com)

## 2.

### Mary's Place

There's a reason visiting divers love the south-side site Mary's Place. It's a lovely cleft in the reef near the edge of the wall — you drop into the fissure and then swim to the "exit," an opening into a deep expanse of blue water. The site is decorated with delicate black corals and sea fans. [roatandivecenter.com](http://roatandivecenter.com)

### DIVER'S GUIDE

#### Average

#### water temp:

High 70s to low 80s

#### What to wear:

Skin or shorty in summer; 3 mm wetsuit in winter

#### Average viz:

40 to 100 feet

#### When to go:

Year-round

#### More info:

[sportdiver.com/roatan](http://sportdiver.com/roatan)

## 3.

### West End Wall

Just off West Bay Beach, this steep drop-off provides lots of drift-diving drama: The sponge-covered wall is a magnet for tarpon and sea turtles. All you have to do is relax and take in the show. [bananarama.com](http://bananarama.com)

## 4.

### Barbareta Banks

Trips to this marine park off Roatan's east end is offered as a "safari dive." With luck, you'll spot eagle rays, barracudas and nurse sharks as you explore the wall that runs along the entire 3-mile length of Barbareta Island. [tranquilseas.com](http://tranquilseas.com)

## 5.

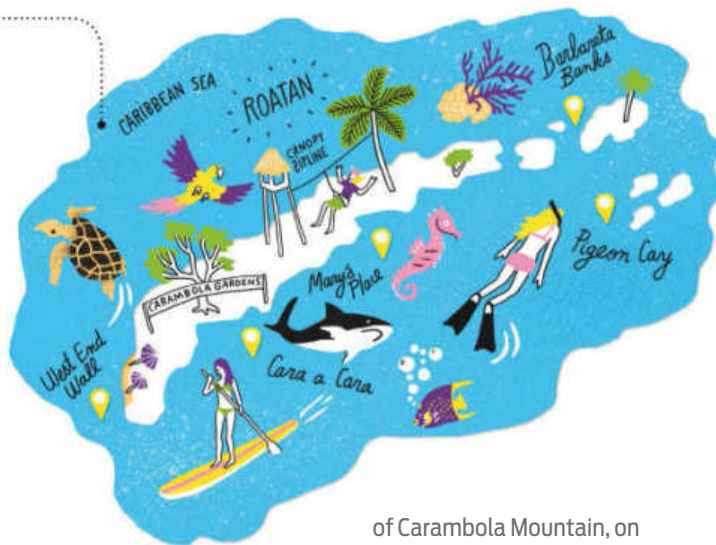
### Cara a Cara

Your dive operator can arrange this shark dive off the island's south side. Wranglers feed the reef sharks while divers kneel on the seafloor at about 70 feet. The action includes black grouper and horse-eye jacks looking for scraps the sharks leave behind. [sharkdiveroatan.net](http://sharkdiveroatan.net)

## 6.

### Pirates of the Caribbean Canopy Zip-Line

With platforms bearing names such as Capt. Billy Bones Main Deck and Long John Silver



Precipice Bridge, you'll be shouting, "Ahoy, me hearties!" by the end of this rollicking, 2-mile canopy zip-line that offers breathtaking views of both sides of the island. [roatanpiratescanopy.com](http://roatanpiratescanopy.com)

## 7.

### Pigeon Cay Eco Tour

You will forget cellphones, deadlines and the Kardashians on this giant sandbar that is surrounded by a Crayola array of alternating blues and turquoises. Enjoy snorkeling, lying on the beach, and picnicking on this sandy islet off Barbareta.

## 8.

### Carambola Gardens

Choose the rainforest trail and mountain hike, which winds its way through a dense tropical forest of cahoon palms and island hardwoods up to the summit

of Carambola Mountain, on Roatan's north side. Use your camera's panoramic setting to capture the stunning vista of sea and jungle. [carambolagardens.com](http://carambolagardens.com)

## 9.

### Stand-Up Paddleboarding

Take a two-hour round-trip paddle along the West End on the inside of the reef. Your companions will be turtles, eagle rays and tropical fish. [roatanpaddleboards.com](http://roatanpaddleboards.com)

## 10.

### Roatan Oasis

Tropical cocktails and fresh seafood — including oysters flown in from the Gulf of Fonseca — are highlights at Roatan Oasis on the island's West End; you'll be able to kick back and relive a day's worth of diving while enjoying delicious, eco-friendly food and drinks. [facebook.com/RoatanOasis](https://facebook.com/RoatanOasis)





## Atlantic, Caribbean and Latin America

**1. Buddy Dive Resort** - Bonaire - Experience an unspoiled natural paradise offering spectacular sunsets, gentle breezes and crystal-clear turquoise waters. Page 73 [www.buddydive.com](http://www.buddydive.com)

**2. Caradonna Dive Adventures** - Professional dive travel services to help you experience and encounter new wonders in another world. Page 17 [www.caradonna.com](http://www.caradonna.com)

**3. Cayman Islands Department of Tourism** - Only 1 hour and 10 minutes from Miami - fly in the morning, beach in the afternoon! Page 7 [www.divecayman.ky](http://www.divecayman.ky)

**4. Divetech** - 21 years of adventurous dive & room packages/ variety of accommodations. North wall boat/shore diving, training, rebreathers, freediving, kids diving, tek diving. Page 19 [www.divetech.com](http://www.divetech.com)

**5. Dive Provo** - Providenciales, Turks & Caicos - Tropical scuba diving at its best. Novice through experienced divers welcome. Page 72 [www.diveprovo.com](http://www.diveprovo.com)

**6. Don Foster's Dive Cayman** - With our fleet of dive boats, friendly staff, service and instruction, divers keep coming back for more. Page 23 [www.donfosters.com](http://www.donfosters.com)

**7. Southern Cross** - A small, very comfortable, award-winning resort with world-famous diving and sport fishing in Little Cayman. Page 19 [www.southerncrossclub.com](http://www.southerncrossclub.com)

**8. Tranquilseas Eco Lodge & Dive Centre** - Roatan: The perfect island hideaway. Beautiful oceanview resort. Personal and friendly first class service. Page 73 [www.tranquilseas.com](http://www.tranquilseas.com)

## Hawaii

**9. Dive Oahu** - PADI Gold Palm Dive Center just 3 minutes from Waikiki. We dive all the major wrecks. Page 29 [www.diveoahu.com](http://www.diveoahu.com)

**10. Hawaiian Rafting Adventures** - The best Maui has to offer with dive shop in Lahaina offering a range of tours and services. Page 29 [www.hawaiianrafting.com](http://www.hawaiianrafting.com)

**11. Jack's Diving Locker** - Jack's Diving Locker is the right place to take your IDC training. Page 29 [www.jacksdivinglocker.com](http://www.jacksdivinglocker.com)

**12. Kona Honu Divers, Inc.** - Kona, Hawaii - Committed to providing the highest-quality experience and value. Page 29 [www.konahonudivers.com](http://www.konahonudivers.com)

**13. Seasport Divers** - Full-service dive shop specializing in local Kauai scuba diving tours, snorkeling tours and scuba certification courses. Page 29 [www.seasportdivers.com](http://www.seasportdivers.com)

## Pacific & Exotic

**14. Sam's Tours** - Palau's #1 ranked dive operation, we specialize in amazing diving. Page 73 [www.sams-tours.com](http://www.sams-tours.com)

## United States

**15. Florida Keys and Key West** - The 120 miles of beautiful islands that you can drive to just off the coast of Southern Florida. Page 15 [www.fl-keys.com](http://www.fl-keys.com)

**16. Panhandle Shipwreck Trail** - The Florida Panhandle Shipwreck Trail consists of 12 unique shipwrecks along Florida's Panhandle. Page 23 [www.floridapanhandledivetrail.com](http://www.floridapanhandledivetrail.com)

## Camps and Events

**17. PADI** - Join Project AWARE divers in protecting our ocean planet - one dive at a time. Page 2-3, 33 [www.projectaware.org](http://www.projectaware.org)

## Instruction/Training

**18. DAN** - Leading dive safety through research, education, emergency assistance and insurance programs for 30 years. Page 37 [www.diversalernetnetwork.org](http://www.diversalernetnetwork.org)

**19. MyPADI** - Share what "MyPADI" means to you @ PADI#mypadi. Page 8 [www.padi.com](http://www.padi.com)

**20. Ocean Corporation** - Offering commercial diver training, under water welding, ROVs and NDT weld inspector training since 1969. Page 75 [www.oceancorp.com](http://www.oceancorp.com)

## Live-aboards

**21. Truk Odyssey** - Dive with Odyssey to see the ghost fleet of Truk Lagoon. Page 72 [www.trukodyssey.com](http://www.trukodyssey.com)

## Photography/Video

**22. Sealife Cameras** - Underwater cameras and accessories to help you explore the underwater world. Page 13, 28, 72 [www.sealife-cameras.com](http://www.sealife-cameras.com)

**23. Ultralight Control Systems** - Manufacturers of trays and arms for your cameras, lights & strobes for digital, video or film. Page 73 [www.ulcs.com](http://www.ulcs.com)

## Scuba Accessories

**24. Citizen Watch Company of America** - Discover Citizen's outstanding collection of dive watches and dive computers, including the incomparable Cyber Aqualand Nx. Page 5 [www.citizenwatch.com](http://www.citizenwatch.com)

## Editorially Featured

100. Akona 30

101. Atomic Aquatica 30

102. Backscatter 61

103. Camaro 30

104. Cressi 30, 63

105. Dive Rite 30

106. Fourth Element 63

107. Light & Motion 61

108. New World Publications 67

109. Oceanic 30, 62

110. Hollis 23

111. Scubapro 30, 62

112. SeaLife 36

113. Spyderco 36

114. Submersible Systems 36

115. Suunto 23

## Scuba Equipment

**25. Cressi** - A company close to its Italian sea-loving heritage providing superior designs for discriminating divers. Page 76 [www.cressisubusa.com](http://www.cressisubusa.com)

**26. Oceanic Worldwide** - Innovative diving products sold through more than 600 U.S. dive retailers and worldwide through more than 25 international distributors. Page 25 [www.oceanicworldwide.com](http://www.oceanicworldwide.com)





**SeaLife flex-connect®**

**LIGHTS**  
**ARMS**  
**GRIPS**  
**TRAYS**

**Sea Dragon 2000**  
Powerful 3-in-1 light for photo, video and dive

**Flex-Connect Flex Arm**  
Directs light where ever you need it with 100-degrees of bending motion

**Flex-Connect Grip**  
Provides comfort and improved handling

**Just a Click**  
Build or change your set-up in seconds

**Flex-Connect Tray**  
Expand your camera set: Micro, Single and Dual Trays available

**Fast. Easy. Universal.**  
Easily add lighting & comfort to any underwater camera

Upgrade your dive with lights, trays, grips and accessories that are universal to all underwater cameras, including GoPro. Flex-Connect allows you to expand your camera set from compact to full-featured in seconds with just a "click" - the quick and easy way to adjust to any dive environment.

[sealife-cameras.com](http://sealife-cameras.com)  
f/SeaLifeCameras

**SeaLife**

the new way to see

# TRUK LAGOON

- Includes all meals, beverages & transfers
- Free Nitrox
- Unique outer reef, shark, and tech diving
- Nine luxury suites

**1-800-757-5396**

**Odyssey ADVENTURES**



[www.trukodyssey.com](http://www.trukodyssey.com)  
[info@trukodyssey.com](mailto:info@trukodyssey.com)

# Dive Provo

*Diving as it Should Be!*

Experience the best diving the Turks & Caicos Islands have to offer. Call our reservations office or go online for full details.

**1-800-234-7768**  
[www.diveprovo.com](http://www.diveprovo.com)



# SAVE TIME

**24/7 CUSTOMER SERVICE** is only a click away!

- Change Your Address
- Check Your Account Status
- Renew, Give a Gift or Pay a Bill
- Replace Missing Issues



**SportDiver**  
THE OFFICIAL PUBLICATION OF THE PADI DIVING SOCIETY

Just log on to:  
**[www.sportdiver.com/cs](http://www.sportdiver.com/cs)**

# DIVE IN...



**...with Sport Diver on the iPad™!**

Download the **FREE** Sport Diver App today in the App Store.

**APP FEATURES:**

- Free Sample Issue
- Email Articles
- Social Sharing
- Save Images
- And More

**DOWNLOAD NOW!**

Available on the App Store

Apple, the Apple Logo, and iTunes are trademarks of Apple Inc., registered in the U.S. and other countries. iPad is a trademark of Apple Inc. App Store is a service mark of Apple Inc.





EAT, SLEEP, DIVE.



**TRANQUILSEAS**  
ECO-LODGE & DIVE CENTER

WWW.TRANQUILSEAS.COM • +504 9549-0000  
TRANQUILSEASECODIVERS@GMAIL.COM

Photo by Kids Sea Camp



## Your Buddies one family

Specialized in kids diving programs and already 10 years a proud host of Kids Sea Camp! Book now for a family holiday you won't forget!

[www.buddydive.com/family](http://www.buddydive.com/family)

Buddy Dive



Bonaire & Dominica



Toll free US/Canada: 1-866-GO-BUDDY  
[www.buddydive.com](http://www.buddydive.com)



**SAM'S TOURS**  
PALAU  
[www.samstours.com](http://www.samstours.com)

*Palau's premier scuba diving and eco-adventure company.*

Scuba Diving • PADI Dive Courses • Liveaboard  
Kayaking • Snorkeling Tours • Land Tours



[reservations@samstours.com](mailto:reservations@samstours.com)  
Tel: +(680) 488-1062 Fax: +(680) 488-5003

FROM THE MAKERS OF THE MOST VERSATILE,  
LIGHTEST WEIGHT, ALUMINUM ARMS ON THE MARKET

Lots of GoPro  
accessories  
available!



We make adapters for all housings, strobes, video lights and spotting lights. The original arms with o-rings in the ball for ease of use.

**DON'T BE FOOLED BY COPYCAT BRANDS THAT LOOK LIKE OURS.  
ASK FOR GENUINE ULTRALIGHT PARTS MADE IN THE USA.**

Often copied, never equaled

**(805) 484-3334 • [www.ulcs.com](http://www.ulcs.com)**



# Learn from This

Close calls and how to handle them

## Double Leg Cramps

One diver becomes immobile as the current carries him past the boat

BY KARL SHREEVES



### INCIDENT REPORT

**DIVERS:** Miguel (AOW, 120 dives) and Paulo (Rescue, 87 dives)

**SITE:** Cooper River, South Carolina

**CONDITIONS:** Visibility 6 to 8 feet, 72°F, relatively low current flow for the river

**M**aking their second boat dive for fossils in the brown waters of Cooper River in South Carolina, Miguel and Paulo were well ahead of the boat, 30 feet deep, finding shark teeth and other fossils in a fresh fossil bed. With the

low flow and excellent fossil finds, the pair had hurried to change cylinders and start their second dive, skipping lunch and refreshments so they could get back in quickly.

At 72 minutes, Miguel signaled “up.” He and Paulo ascended, surfacing about 100 yards upstream from the boat but on the opposite bank. The pair inflated their BCs and began swimming across the river to intercept the boat as the current pushed them.

Miguel suddenly yelled: “Ow! Leg cramp!” He began kicking with the other leg alone, but it also cramped up. He stretched and relaxed his legs, but they recramped when he tried to kick. “Give me a tow?” he asked Paulo, realizing that otherwise, they’d drift past the boat. “No problem,” said Paulo. “Relax and enjoy the ride.” With Paulo towing Miguel, the pair of divers reached the boat with little difficulty; Paulo helped Miguel out of his gear while still in the water so he could climb the ladder with less weight on his cramping legs.

### What They Did Wrong

They failed to adequately rest and rehydrate between dives. Dehydration is a common cause of cramps, and likely caused Miguel’s cramps.

### What They Did Right

They started their dive into the current, ahead of the boat. They established buoyancy at the surface when they surfaced. Miguel asked for help when he needed it.

### Five Tips from This Incident

**1.**

**Allow adequate time to rest,** rewarm and rehydrate between dives. Immersion and breathing dry scuba air tend to dehydrate you, so consume ample water, juice, etc., before and after diving.

**2.**

**Don’t hesitate** to ask your buddy (or divemaster) to assist you. Divers who ask for help are less likely to have a small, manageable problem become a big problem or emergency.

**3.**

**Be better-prepared** to handle problems by completing the PADI Rescue Diver course.

**4.**

**Remember** that when diving in current, unless drift diving, it’s generally recommended that you start your dive swimming into the current so you’re not fighting it to get back.

**5.**

**When you’re on the surface,** stay positively buoyant. This not only helps you relax, but if your buddy has a problem, you’re in a better position to help.

Sport Diver (ISSN 1077-985X) is published 10 times per year (J/F, March, April, May, June, July, Aug., Sept., Oct., N/D) by Bonnier Corp., 460 N. Orlando Ave., Suite 200, Winter Park, FL 32789. Basic rate \$19.97 for one year. (Canada residents please add \$12 per year for postage; all other foreign residents please add \$24 for postage, U.S. funds only.) Periodicals postage paid at Winter Park, FL, and additional offices. Contents copyright 2016 by Bonnier Corp. For subscription information or questions, email [PACcustserv@cdsfulfillment.com](mailto:PACcustserv@cdsfulfillment.com). Contributions: Editorial comments, articles, photography or artwork should be addressed to Editor, Sport Diver, P.O. Box 6500, Winter Park, FL 32790. The editorial staff can also be reached via the Internet by addressing electronic mail to [editor@sportdiver.com](mailto:editor@sportdiver.com). Not responsible for solicited or unsolicited material. Advertisers: UPS and overnight delivery to 460 N. Orlando Ave., Suite 200, Winter Park, FL 32789. Information and media kits are available by calling 407-628-4802. The contents of this publication, including diving techniques and use of diving equipment, reflect the individual experiences of the writers and are not necessarily the recommended practices of Bonnier Corp. and are not intended for the sole purpose of diving instruction. Individuals seeking to participate in activities described in this publication should be properly trained and/or certified for such by a qualified professional diving instructor. Diving or use of diving equipment by untrained individuals can lead to serious injury or death. Neither Bonnier Corp., Sport Diver magazine nor its contributors shall be liable for any mishap claimed to result from use of such material. **POSTMASTER:** Send address changes to Sport Diver magazine, P.O. Box 6364 Harlan, IA 51593-1864, CANADA POST: Publications Mail Agreement Number: 40612608. Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2. Printed in the USA.



# you're not like everybody else, so why work like it?

**JOIN THE ELITE AT OCEAN CORP.**



**POST-9/11 GI BILL  
ACCEPTED**

**LEARN MORE NOW!**  
**[www.oceancorp.com](http://www.oceancorp.com)**





# ULTRALIGHT

## IT COULDN'T BE ANY LIGHTER

Together with the Travelight and the Air Travel, the Cressi Ultralight BC is a new addition to Cressi's Travel BC line. In 2007, Cressi introduced the Flex BC's, and since then our focus has been to combine low weight, quality, safety and key features for the diver. Whether you prefer a back inflation style BC, or a Jacket style BC, Cressi will give you the perfect solution for your "dive travel" needs.



Travelight 



**TRAVELIGHT**  
4.62 LBs SIZE M



**AIR TRAVEL**  
5.5 LBs SIZE M



**ULTRALIGHT**  
4.4LBs SIZE M



- Womens and Mens Option/Anatomical Shoulder Straps
- Jacket Style/Zipped Pockets/2 Back Trim Weight Pockets
- Back Inflation Style/Hideaway Side Pockets
- Fast Folding System/3 Release Valves/Light Alloy D-Rings
- Weight Integrated Pockets: Cressi Flat - Lock Aid System